An Address

ON THE

CORRELATION OF SYMPTOMS AND SIGNS IN SOME ABDOMINAL DISEASES.

DELIVERED BEFORE THE MANCHESTER PATHOLOGICAL SOCIETY.

BY B. G. A. MOYNIHAN, M.S., F.R.C.S.,

PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF LEEDS.

WHEN Dr. Craven Moore invited me to deliver an address before the Manchester Pathological Society, I felt at first, and perhaps not unnaturally, certain qualms as to accepting. In the recent wide advances made by pure pathology I have played no part and could speak with no authority. But it might successfully be argued that no pathology can be pure which does not attach itself in some degree to those clinical manifestations to which morbid processes in any part may give rise. And it may be in the recollection of some of you that I ventured a few years ago to coin the phrase, the "pathology of the living," to assert my belief in the importance of a knowledge of the morbid changes in the abdominal viscera during the life of the patient.[1] The final changes occurring as the result of a long-sustained disease in any organ are no doubt of interest; but that interest is, in my view, bereft of its chief title to importance if an intimate acquaintance with it does not confer the power of relieving the suffering or prolonging the life of the one who has fallen a victim to this particular malady. My own investigations into this form of pathology have been largely concerned with the abdominal organs. In connexion with some of these new discoveries have been made—for example, in respect of duodenal ulcer, and of the many forms of chronic inflammatory troubles in the large intestine; whereas in others the firmly established views and the opinions tenaciously held by generations of physicians have been shown to be founded on fancy rather than on fact, the most excellent example of this being, of course, in connexion with the various disorders classified under the term "dyspepsia." In his investigations the surgeon has not always worked in the same medium nor with the same weapons. Speaking figuratively, he has had to use the hatchet and the crowbar as well as the trowel; he has had to destroy as well as to design.

Take, for example, the condition recognized by the term "gastric ulcer." Among the many diseases which the physician has felt most competence and confidence in recognizing there are probably few or none whose symptoms would appear to be more definite or more characteristic than is the case with gastric ulcer. The description given of this disease in the ordinary textbooks of medicine are such that its recognition would seem to be a matter of ease and certainty; and the unequivocal diagnosis is made with quiet assurance and with astounding frequency, if the records of any of the larger hospitals can be accepted as evidence. There can, however, be no doubt whatever that in the majority of the cases the opinion has been wrong, and the treatment based upon it futile and ill-directed. For when a diagnosis of ulcer of the stomach has been made with every circumstance of care, and with every aspect of reason and probability, in a series of cases which are examined upon the operation table, it is found that in a large proportion of them no slightest evidence of structural disease can be discovered in that organ. It does not need a long experience of the operation room to convince any one that the "gastric ulcers" have more often than not their seat in other organs than the stomach.

The surgeon in his inquiry into this matter has passed through three phases of activity. In the first, fortified by his early experience of the dramatic results of gastro-enterostomy performed in cases of pyloric stenosis (three of my patients doubled their weight and one almost trebled it), he was led to apply this operation in cases in which, upon every ground of inquiry and experience, a gastric ulcer was assumed to be present. He acted upon the medical diagnosis, and it was for a time his firm belief that inveterate and rebellious cases of gastric ulcer could be most satisfactorily treated by this method of short-circuiting, or of "draining the stomach," as it was said. Inspection of the stomach and the verification of the real existence of an ulcer were slurred over and the operator made haste to perform his intended procedure. The results of operations so conducted were not gratifying. In many cases the results were bad, and in some disastrous. It was at this time that we began to assert, to the surprise of many and the consternation of some, that before the surgeon proceeded to the performance of an anastomosis between the stomach and the jejunum he must be satisfied of the undoubted existence of an ulcer, which was held to be a "visible, tangible, or demonstrable lesion." One of great culture and experience wrote to ask me if it was "really true that an ulcer which has been long present, exciting severe symptoms in many attacks, could be seen or felt," and asking whether when of small size and of slight depth, like a "chap" on the hand, it could not be hidden away by a fold of the mucosa of the stomach. I held it then, and hold it now as firmly as ever, to be true that, except perhaps in the rarest possible circumstances (I have only one case in evidence), an ulcer which has been the cause of prolonged and recurrent "attacks" is an ulcer which has engaged all the coats of the stomach in its ravages, and can therefore be seen from the outside of the viscus, and can be felt and made plain to the onlooker. This view seemed one that was hard to accept, and to this day it is perhaps not appreciated at its value, with the result that purposeless operations are still performed upon the stomach. It seemed, then, to me that in the event of failure to discover any lesion in the stomach no operation involving that organ should be done. In the second stage we were accordingly content to investigate cases of supposed gastric ulcer and to treat them in accordance with the disclosures made at the time the parts were laid bare for inspection. If an ulcer was found it was excised, or if causing obstruction a short-circuit was made; if no ulcer was found, admission of an incorrect diagnosis was frankly made and the abdomen was closed. To some it seemed a painful and bitter experience to acknowledge an error of diagnosis—to discover nothing where much had been expected. But consolations were speedily forthcoming. It is not often that the end of any inquiry can be foreseen when only the first developments are being made. The old alchemists laboured to discover the transmutation of the baser metals into gold; in that they failed, but they built up the science of chemistry. Saul went in search of his father's she-asses, and found a kingdom. This stage of simple inquiry was happily very brief, for it soon became a matter of certainty that patients who gave the history of incoercible dyspepsia must be suffering from a real disease, from an organic lesion somewhere, and not from any real or fictitious vice in the action or secretion of the stomach.

It was therefore in the third and present stage that we began to widen the scope of our inquiry, to enlarge, as we could do with safety, the area of investigation within the abdomen, until we were able to discover some gross lesion which might perhaps be associated with the symptoms we were called upon to relieve. And here a remarkable discovery awaited us—a discovery for which all the experience of *post-mortem* pathology or the teachings of the textbooks had left us wholly unprepared. We found, and we still find, that in more than one-half of the cases in which an operation for gastric ulcer was deemed expedient by reason of the wearisome persistence of pain, vomiting, and occasional haematemesis, their stubbornness or open rebellion against the most assiduous and approved treatment, the stomach showed no evidence of textural change. A lesion could be found quite different from that expected—an adherent or obstructed appendix, a tuberculous ulceration of the ileum or the caecum, a prolapsed and perhaps obstructed stomach, or a calculous cholecystitis. Arbuthnot Lane lays, I believe, the chief responsibility in many of these cases upon the ileum, in which he describes a "kink" a few inches above the caecum. The world would be an easier place to live in, and our lot would be lighter, if only the hypothesis of Lane were capable of proof. But for my part I am sorry to have to say that in spite of a search, as capable as I can make it, in the last two years, I discover only very infrequently the "kink" in the ileum; and I have as yet never found it without the plain evidence of an

appendicitis, to which I believe it to be secondary. In my own experience the commonest site of a "gastric ulcer" is the right iliac fossa, and I have no doubt whatever that in a majority of the cases which form the basis or the text of the very careful and elaborate treatises by the physicians of all lands upon "gastric ulcer," no morbid process of this kind was present. If this be true many questions at once arise, of which two are of the greatest importance.

The first is this: If in cases of so-called "gastric ulcer" there is no evidence of structural disease in the stomach, but an obvious morbid condition in another part the removal of which relieves the patients of all the symptoms ascribed to an ulcer, what is the explanation of the gastric manifestations? And especially what is the reason for the severe and sometimes recurrent haematemesis?

The second is: If a "gastric ulcer" is so frequently not a lesion in the stomach, but in another part, what is the value of the great variety of "cures" that are so much vaunted?

With regard to haematemesis. This is, of course, a very striking phenomenon, and when it suddenly occurs in considerable quantities it is a symptom which naturally causes great alarm. By the German physicians especially, I believe, great reliance is placed upon the occurrence of haematemesis as a means of recognizing the presence of a gastric ulcer. But it is common knowledge, I suppose, that patients have died of haematemesis in whom no lesion of any kind was discovered in the mucosa of the oesophagus or stomach. I say "was discovered," but that, of course, does not strictly imply that it was not present. For Dr. Bolton has shown with what sedulous care the mucous membrane, properly stretched out, must be examined, with the aid of a magnifying glass, before any crack or fissure, from which blood may have flown freely, can be discovered. No one, I imagine, supposes that a mucous membrane sweats blood, without any lesion of the surface, in the way the skin sweats. The old beliefs in that kind of "vicarious menstruation" are not heard of nowadays. For blood to come in gross quantities there must be a real and a deep lesion of the surface of the stomach. That must, I think, be conceded. But this does not imply that such a lesion is an old one; indeed, all the information we possess with regard to the local destructions, erosions, fissures, or acute ulcers of the alimentary canal, in cases of typhoid fever (in the stomach or duodenum), in erysipelas, in cases of burn, in albuminuria and many other acute febrile disorders, suffices to show that these things are toxaemic in character, abrupt in onset, quick in development, and probably rapid in their disappearance. It does not seem difficult to me to suppose that in the presence of a continuing septic process in, say, the appendix, waves of a more acute form of infection may from time to time occur, in each of which a toxaemic result in the stomach or duodenum may be expressed by gastric symptoms, among which haematemesis is the most prominent. In this connexion recent inquiries conducted at the London Hospital are of the greatest interest. They show more clearly than any other pathological records of which I have knowledge how dependent a severe haematemesis may be upon lesions which are primarily unconnected with the stomach. Hutchison records[2] 24 cases of fatal haemorrhage from the stomach after operations of various kinds upon the abdominal viscera. Of these 24 no less than 21 were cases of appendicitis with septic complications, localized abscess, or diffuse peritonitis. In three cases recent acute ulcers were found in the stomach (twice) and in the duodenum (once); in the remaining cases only "haemorrhagic erosions" were found. The origin of this serious and profuse bleeding is ascribed to a profound alteration in the blood due in most cases to toxins of septic origin. The experiments of Wilkie would make it appear probable that a retrograde venous embolism from the original septic focus may be responsible for the development of acute ulceration in the stomach or duodenum.

It is well for the purposes of one's work to have some sort of mental picture of the diseases with which one is called upon to deal. The view I take of "gastric ulcer" as described in the textbooks of to-day is that in the majority of cases it is not primarily or chiefly a lesion in the stomach, but consists of a persisting chronic infective lesion in, as a rule, some abdominal organ, and that in this focus more acute infections from time to time arise which cause those transient exacerbations in, or additions to, the symptoms which are sustained more quietly throughout the whole course of events. Whether the more quiescent symptoms are due to a secondary infective gastritis, to an enhanced or erratic activity in the secretion of the gastric juice, or to those irregular muscular conditions which are known as "pylorospasm," or to any combination of these, seems to be quite uncertain. That this hypothesis is not altogether fanciful may be firmly asserted in view of the undoubted fact that in cases of chronic gastric and duodenal ulcer a primary focus of infection is discovered very frequently in the abdomen. Its most common site is the appendix. Every appendix that was taken away has been drawn, but in a few cases the organ was not examined, for it was believed that in some the safety of the patient would be best considered by a rapid operation in which no more was done than was essential to the saving of life. Where time safely allowed it the appendix was always removed. It will be seen upon scrutiny of the drawings that in almost all the plain evidences of advanced and ancient disease can be recognized. Infection, therefore, would appear to be the essential original condition responsible for the later, strictly secondary, and dependent lesions which we recognize as acute ulceration, erosion, fissure, and finally chronic ulceration in the stomach and duodenum. Is this lesson not one which has been entirely learnt from a study of the "pathology of the living"?

For the second question, as to the value of the Lenhartz and other modes of treatment, the answer I think is plain. If in the majority of the cases of "gastric ulcer" the stomach is not primarily affected, these dietetic cures being surely dependent for their reason upon an accurate recognition of the morbid conditions they are intended to relieve, can be of little value. The surgeon, of course, sees the medical failures; the successes never reach him, and his view therefore, though not prejudiced, is, no doubt, deflected by the greater weight of evidence coming from the one direction. And, of course, it must be admitted that even if the real "gastric ulcer" is an infective condition low down in the bowel, the rest and starvation may well permit of its subsidence for a time. This is the view of "gastric ulcer" which the work of the surgeon compels him now to take. In giving his experience as it is formed in the operation theatre, he has no desire to change true rules for odd inventions, but only to disclose those things which are revealed by his different mode of study.

One very remarkable contrast is found in the experience derived respectively from the operation theatre and the *post-mortem* room. In all the textbooks of medicine the far greater frequency of occurrence of gastric ulcer as compared with duodenal ulcer is mentioned. The ratio is variously stated as between 9 to 1 (Trier) and 40 to 1 (Andral). Probably a proportion of 10 to 1 (that given by Fenwick) is accepted by most authorities. The experience of surgeons in recent years has shown, as stated above, that most cases of "gastric ulcer" do not affect the stomach, and the disclosures upon the operation table prove that duodenal ulcer is decidedly commoner than gastric ulcer. The ratio is probably about 5 to 1.

What, then, it may be asked, are the symptoms which allow a diagnosis of chronic gastric ulcer to be made with reasonable probability? When the ulcer is situated on the lesser curvature, extending down one or both surfaces of the stomach—a very common condition—the symptoms are in the very great majority of cases marked out chiefly by their order and precision. Pain follows upon the ingestion of food after a definite interval, which is consistent throughout the whole history of the case. As a rule the interval of comfort after a meal varies from half an hour to one hour. The pain is felt chiefly in the middle line and to the left, and tenderness also is more marked in these positions. If the hand is placed vertically with the fingers towards the chest, immediately below the costal margin and to the left of the mid-line, and the patient takes a deep breath at a moment when the pressure of the hand is increased, a sharp pain will be felt by the patient. Occasionally the pain radiates along the left costal margin, or upwards to the left breast, and this appears more especially to be the case when adhesions exist between the ulcer and the liver or the diaphragm. If the ulcer

should be on the posterior surface of the stomach, and deeply erode the pancreas, pain in the back is very severe, and may be constant. So far as my own experience goes, a deep, gnawing, persisting pain in the back is the invariable accompaniment of the ulceration, which burrows in the pancreas. Pain in the back it will be remembered is a very significant feature in cases of acute pancreatitis. The pain in cases of gastric ulcer, then, is regular in the time of its appearance, and in some cases it is marked by the seasonal variations so very definitely noticed in cases of ulceration in the duodenum. The summer months, in such examples, are those in which there is most freedom from suffering. Vomiting, which brings relief from pain, and haematemesis are both at times present, but are no help in the diagnosis unless the methodical repetition of the attacks of pain is also noticed. On *x*-ray examination of the stomach after the ingestion of a bismuth meal two conditions may be found. The appearances of an hour-glass stomach may be portrayed, or delay in the emptying of the stomach may be noticed. Both are probably due to spasm of the muscles of the stomach, affecting, in the one, the zone of the gastric wall in which the ulcer lies, and in the other the pyloric antrum, producing the condition described as "pylorospasm."

In a few cases a prepyloric ulcer may give rise to symptoms which mimic with remarkable accuracy those produced by a duodenal ulcer. These cases are very rare, but of their existence there is no doubt. In such cases a differential diagnosis may be made by observing that when an *x*-ray examination is made the "hypertonic" condition of the stomach is present in duodenal but not in gastric cases, and by examination of the stomach contents for free HCl. If an excess of acid is discovered to be constant (three examinations at intervals are necessary, according to Craven Moore) the ulcer is probably in the duodenum. If the acidity is low, then the ulcer is probably in the stomach. In one of my cases, in which a history suggesting very strongly the presence of a duodenal ulcer was given by a patient whose gastric contents showed a very low acidity, we found a large saddle-shaped ulcer about 3 in. proximal to the pylorus. The duodenum was intact.

A diagnosis, then, of chronic gastric ulcer depends for its accuracy upon a history the details of which are repeated from day to day with very definite and sustained regularity, upon certain signs given on physical examination, upon an *x*-ray examination of the stomach, and upon the results of a series of chemical investigations of the gastric contents. But even when every care is exercised, the most rigid inquiry made, and the most painstaking examination conducted, a greater number of errors in diagnosis will be found to have crept in than in cases of duodenal ulcer. In this latter disease mistakes in diagnosis are rare.

Among the more firmly accepted beliefs inculcated in the past by *post-mortem* experience, and chiefly by those statements of the textbooks which are loyally copied from one generation to another, is this: that in the majority of the cases—the usual estimate is 90 per cent.—gall stones exist in the gall bladder without giving rise to any symptoms. If it is necessary to substantiate this statement I might quote from several authorities. The best textbook of medicine in the English language contains this sentence:

> In the majority of cases gall stones cause no symptoms. The gall bladder will tolerate the presence of large numbers for an indefinite period of time.

The most authoritative work in the German language states:

> Cholelithiasis is, as *post-mortem* observations show, an extraordinarily common malady. On an average every tenth human being, and of elderly women perhaps every fourth, has gall stones. This does not, of course, express the frequency with which biliary calculi give rise to morbid phenomena, for one often enough finds *post mortem* the gall bladder and bile ducts completely packed with calculi, although these have never caused any inconvenience or produced any ill effects.

The distinguished surgeon who contributes the chapter on gall stones to *Allbutt's System of Medicine* says that:

> Gall stones may be found after death without having produced any symptoms during life.

There is no need to add to the list, which would include almost every authority, living or dead. In opposition to these opinions I desire to state as positively as I can that gall stones almost never exist in any circumstances without the production of quite characteristic symptoms—symptoms which allow of the recognition of their cause with great accuracy. In all my experience I have only twice operated upon patients for gall stones without being able to elicit a previous history of "gall-bladder dyspepsia" of months' or years' duration. The textbooks tell us that the majority of cases of dyspepsia, especially flatulent dyspepsia, are "functional" in origin; and, again, that in many cases gall stones exist within the gall bladder without exhibiting their presence. The two statements require correlation; each explains the error of the other. For without doubt many of the so-called "functional" forms of dyspepsia are organic, and chief among them all is that connected with cholelithiasis. Of the inaugural symptoms aroused by the formation and the presence of stones in the gall-bladder I have written fully elsewhere, and can now add nothing to that description.[3] A greatly enlarged experience has confirmed the accuracy of the picture I have there drawn. It is remarkable to note with what frequency many stones may be present in the common duct without any notable obstruction to the passage of bile resulting from their presence. In the large number of "secondary" operations that I perform upon the biliary tract the condition most commonly disclosed is the lodgement in the common duct, at any point, including the ampulla, of a stone or stones whose presence has escaped recognition at the first operation. The technical difficulties of these secondary interventions are so considerable (they are greater, I believe, than in any other operations) that any one who begins an operation for cholelithiasis should make it his business to search and search again all the possible channels in which a stone may have been arrested. The reason for the so frequent overlooking of these stones is that jaundice has not been present, and accordingly a search for a calculus in the main bile passage has been thought unnecessary. When I look through my cases of recent years I find that in no less than 25 per cent. of the patients from whose common ducts or hepatic ducts I have extracted calculi there is not at the moment, nor has there ever been in any period of the history, the remotest suspicion of a tinge of jaundice. Jaundice is not, as Courvoisier supposed, the "cardinal symptom" of stone in the common duct. It cannot be so if it is absent in this large proportion of cases. But if the staining by bile of the skin or conjunctiva has never been observed, is it possible to forecast the discovery of stones in the duct during an operation? In the large majority of cases the diagnosis can be made. I have found that in patients who are undoubtedly suffering from cholelithiasis the occurrence of attacks of colic, rather milder in intensity than usual but of far greater frequency —say, four or six attacks in two weeks—especially if the attacks are associated with a mild form of chill, a "goose-flesh" sensation in the skin and a slight shiver, and if there is continuous loss of weight, the presence of a stone may with reasonable confidence be predicted.

An organ which seemed very successfully to elude the vigilance of the pathologists of all times before the present was the pancreas. The grosser forms of disease in it—calculi, cysts, or neoplasms—were from time to time recorded, but of the frequency and importance of the symptoms which resulted from a derangement of the organ there seemed to be no knowledge. For example, Wilks and Moxon say of chronic inflammation of the pancreas that "the anatomical evidence of such occurrence is not very satisfactory." Malignant disease of the pancreas even now has proved, with the rarest exceptions, to be beyond the reach of the most intrepid operators. It is true that a very few cases of pancreatectomy have been performed with results which have been more satisfactory than could have been hoped. But the experience gained from these does not seem to hold out a favourable prospect for future attacks. It is curious to see how small a growth in the head of the pancreas needs to be to evoke long and bitter suffering, and the maddening torture of the itching which deep jaundice will often cause. I have seen a growth no bigger than a hazel nut prove fatal.

In respect of the treatment of these patients, I think we have all feared to advise operation because of the early ghastly mortality, computed by so fine a surgeon as Murphy some years ago at 80 per cent. A record of operations was

indeed a martyrology. In the last few years I have operated in almost all cases that have come to me, for I have felt that it was well worth the while of any patient to face the risk of operation rather than to suffer the agony which must otherwise be his lot. In all cases I have joined the gall bladder to some part of the alimentary canal—to the duodenum if I could do so with ease; to the stomach if it could be reached with less difficulty; in one case only I have taken the colon. The immediate results have been surprisingly good, for no patient yet has died, and the relief has been in all very considerable. I was at first a little apprehensive when the fistula was made into the stomach, but such cases seem to differ in no recognizable particular from those in which the duodenum has been available. Bile flowing freely into the stomach does not seem to impede the full activities of gastric digestion.[4] In two of these cases it is certain that a mistake in diagnosis was made, for after a lapse of two and a half and three years the patients are quite well, have lost all tinge of jaundice, have gained weight and are in active work. They were doubtless examples of that most interesting and remarkable condition, chronic pancreatitis. I am not sure whether in these later days the pancreas is not sometimes accused of inflammatory transgressions when innocent. But it is quite certain that it may be accused of malignancy when it does not deserve the reproach. The elder writers tell us nothing of chronic pancreatitis—the recognition of it is due to the investigations carried out upon the common bile duct in the search for stones impacted therein. When, as sometimes happened, a large hard mass was discovered, malignancy was imputed and a bad prognosis given, which the patient made haste to falsify. Riedel and chiefly Mayo Robson are entitled to the credit of this highly important advance in our knowledge. We are now fully aware of the fact that chronic pancreatitis depends very often for its development upon an infection from the common duct, which is set going by stones in transit or in arrest there. The danger of the condition lies in its continued development long after the original cause has been removed. In a few of my cases, after the lapse of years, glycosuria has developed and the patient has died comatose, no doubt from an implication of the islands of Langerhans in an interacinar inflammation. Glycosuria can be found from time to time in the urine of patients who suffer from cholelithiasis, and it may perhaps rightly be considered as the most urgent of all indications for early operation. In a very large proportion of the cases the pancreatic complication does not need to be specially considered; the removal of the cause, nearly always a calculus, with the subsequent drainage of the bile to the surface, is quite enough to ensure a subsidence of the inflammation. The fact that when a certain limit is overstepped the process of chronic induration will continue unchecked, and that the death of the patient from diabetes may thereby be caused, should, however, urge upon us the necessity of early operative rescue in all these patients.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, November 16th, 1907. [2] *Proc. Roy. Soc. Med.*, 1911, vol. iv, No. 3, p. 61. [3] BRITISH MEDICAL JOURNAL, November 28th, 1908. [4] Ibid., 1901, vol. i, p. 1136.

DURING the year 1911, we learn from the New York *Medical Record*, there were 2,145 deaths among medical practitioners in the United States and Canada. On an estimate of 140,000 physicians the rate was 15.32 per 1,000. For the nine previous years the death-rates were as follows: 1910, 16.96; 1909, 16.2; 1908, 17.39; 1907, 16.01; 1906, 17.0; 1905, 16.36; 1904, 17.14; 1903, 13.7; and 1902, 14.74. The average annual mortality was 16.11 per 1,000. The age of death varied from 23 to 99, with an average of 59 years and 10 months. The chief causes of death in the order named were cerebral haemorrhage, "heart disease," senility, pneumonia, external causes, and kidney disease.

IN connexion with his visit to India, the King has been pleased to confer the following promotions and appointments in the Royal Victorian Order upon members of the medical profession: Lieutenant-Colonel Sir Richard Havelock Charles, K.C.V.O., Serjeant-Surgeon to His Majesty, is promoted to be Knight Grand Cross; Fleet Surgeon Robert Hill, M.V.O., R.N., H.M.S. *Medina*, is appointed a Commander, and Lieutenant-Colonel Robert Bird, C.I.E., Professor of Surgery, Medical College, Calcutta, and Dr. William Turner, Surgeon, Colonial Hospital, Gibraltar, are created Members of the Fourth Class.

An Address

ON

COMPRESSED AIR ILLNESS AND EXPERIMENTAL RESEARCH.

DELIVERED BEFORE THE DUBLIN BRANCH OF THE MEDICAL RESEARCH SOCIETY, JANUARY 25TH, 1912.

BY

LEONARD ERSKINE HILL, M.B., F.R.S.,

LECTURER ON PHYSIOLOGY, LONDON HOSPITAL.

I COME before the Society this evening at a time when there is great hope for the progress of medicine—a time when we look forward to discoveries which will eventually result in an enormous amount of relief to suffering mankind, and a time when this society ought to have very little difficulty in defending itself from the attacks of those who wish to suppress medical research. Within the last year or so we have seen the discovery of a synthetic drug which has given us the means of curing one of the worst diseases that afflict humanity. Ehrlich's great discovery has opened up before us a new field of work, and, further, has inspired us with the belief that similar discoveries may shortly be forthcoming in other departments of medicine. The hope as to the imminence of such discoveries has recently been strengthened by a communication from Morgenroth to the effect that in his laboratory he has succeeded in curing 50 per cent. of the mice infected with the pneumococcus, a septicaemia which kills 100 per cent. Morgenroth has synthesized a drug and standardized the dose, by means of which he has been able to cure half the animals thus infected. We now look forward with some anticipation to see whether the same drug can be used in cases of pneumonia in man; the problem is not only to determine the dosage of the drug which will be effectual in man, but also to prove that the same drug which acts upon the pneumococcic infection in a mouse will also succeed in the human organism. Within the last few weeks also we have learned from Wassermann that he has synthesized a compound of selenium with eosin, and with this he has succeeded in curing cases of cancer in mice. The discovery is only just at its beginning, and in many cases the drug has destroyed the mouse, while in others it has destroyed the cancer and cured the mouse. But from this discovery we entertain the hope that something ultimately will come which will help to alleviate one of the greatest scourges of mankind.

All the great advances have been gained by experiments on animals, and I bring before you to-night a branch of inquiry in which I have been engaged for some fifteen years, hoping to demonstrate to you, again by experiments on animals, that it has been made safe for man, with suitable precautions, to work in compressed air. These precautions have been established by scientific methods and by the methods of research which this society helps to maintain.

Work in compressed air has accounted for a vast amount of sickness, suffering, and loss of life. Ladies who wear ropes of pearls, or pearl ornaments of any kind, are generally unaware of the mortality which follows those engaged in the pursuit of these gems. In the pearl fisheries off Broome in Western Australia, where Japanese are engaged as divers, I understand that the loss of life is something like 7 per cent., and the cemetery at Broome contains scores upon scores of graves of those who have lost their lives in the search for the pearls which decorate the woman of fashion. All this loss of life can be entirely prevented if the scientific methods which have been worked out upon animals are followed; and not only so, but the pearl fisheries can be safely extended with great economic advantage. The same thing holds good for many other branches of industry in which divers or workers in compressed air are employed. Compressed air enters into all great subterranean undertakings of to-day—tunnelling, harbour building, shaft sinking, drainage, pier and bridge constructing, and salvage work, as well as in diving for pearls and sponges. The means of

intercommunication in all the great cities of the world depend upon the tunnels built with the aid of compressed air under the rivers which pass through them; but all such work is limited to a certain depth by the pathological effects produced in the workers. The caisson worker, or diver who uses the diving dress, is surrounded with compressed air and breathes in it freely. The body of either is pressed upon by the air, and it is necessary that the air pressure be kept just greater than that of the water in order that the water may be kept out of the dress or the caisson. I can demonstrate this point on a model diver and a model diving bell or caisson that I have here. As this little model diver descends in the water and I pump air through the dress it will be seen that the pressure of the air, as indicated by the manometer, always remains just greater than the pressure of the superincumbent water above the diver's head. Whether it be the air or water that uniformly presses upon the body, the tissue fluids transmit the pressure equally, and although it is computed that an extra atmosphere means an additional total pressure of 30,000 to 40,000 lb. on the body of a man, no mechanical effect is produced. Living matter is a jelly containing about 80 per cent. of water, and, like water, it is practically incompressible.

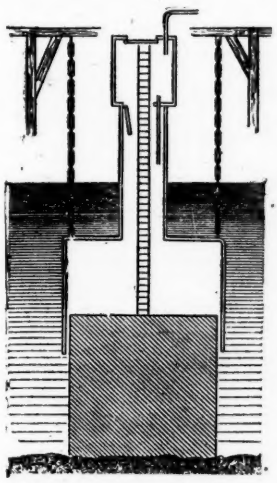


Fig. 1.—Diagram of caisson showing air-lock.

Since attention was first drawn to compressed-air illness in the middle of the last century a large number of medical writers, ignorant of physical laws, have supposed that exposure to compressed air mechanically alters the distribution of blood, forcing it inwards and causing a congestion which on decompression is suddenly and dangerously altered. One of the common kinds of illness in compressed-air work is paralysis, and it was supposed that this paralysis was caused by blood being pressed out of the periphery into the central nervous system and then on decompression—that is, on emerging from the compressed air—this blood underwent a sudden revolution and caused haemorrhages in the nervous system, which, in their turn, produced paralysis. I have noticed that the same false views are even now put forward in the daily press to explain the symptoms shown by aëroplanists when in contact with the rarefied air at high altitudes. The sickness at high altitudes suffered by mountain climbers, balloonists, and aëroplanists has nothing to do with the mere mechanical effect of compressed air. On going into a caisson up to a pressure of several atmospheres no effect is visible upon a man's circulation; no change in the complexion indicates any alteration in the blood-flow through the face, there is no difference in the heart beat, there is nothing, in fact, to suggest that the slightest mechanical effect is produced. Almost the only mechanical effect which is produced on the body by a change in the barometric pressure is an alteration in the pressure in the middle ear, and this is easily relieved by opening the Eustachian tube. Under compressed air also there takes place a compression of any gas which may happen to be in the alimentary canal, and this leads a man to tighten his belt.

The illness which occurs at high altitudes is entirely due to want of oxygen. At an altitude of 18,000 ft., where the barometric pressure is one-half, a man on filling his lungs with air takes in only half the weight of oxygen which he absorbs at sea level. His respiratory and circulatory organs are scarcely able to work sufficiently hard to get the required amount of oxygen. After a time, of course, he gets into training at high altitudes by the exercise and strengthening of his respiratory and circulatory organs, by the increased formation of haemoglobin which carries the oxygen to the tissues, and by the alteration in the alkalinity of the blood, thereby increasing the readiness with which haemoglobin gives up to the tissues its oxygen. The breathing of oxygen entirely removes mountain sickness. It is interesting to note that, while a man depends upon the pressure of oxygen in the atmosphere, a fire depends upon the percentage. At ordinary atmospheric pressure a man can breathe 17 per cent. of oxygen without feeling the slightest symptoms, while at this percentage a fire will not burn. On the other hand, at great altitudes, where the partial pressure of oxygen is halved but the percentage of oxygen remains the same, a man becomes distressed but a fire will burn. Hence the danger of aëroplanists trying to beat altitude records.

No symptoms of illness ever occur when a man is under compressed air. All the illness results from decompression, and the fact that the mere mechanical pressure uniformly applied is of no importance to living matter is shown by the existence of life in the greatest depths of the sea yet sounded, where the superincumbent pressure may equal two, three, or even five miles of water. With the help of Sir Charles Parsons of turbine fame, and a most powerful hydraulic press which he has constructed, I have recently been able to investigate the effect of high pressures of water upon life. So powerful is this press that Sir Charles Parsons has compressed water to 80 per cent. of its bulk. Some years ago a French observer, Regnard, compressed living aquatic animals, frog's muscles, etc., to 500 or even 1,000 atmospheres, and he found that at these high pressures the tissues became stiff and took up water, and that life was destroyed. Sir Charles Parsons and I have found the same thing to happen. Frogs' muscles, exposed to 300 atmospheres for two hours, remain normal in appearance, and excitability is retained, not only in the muscles, but in the nervous system also.

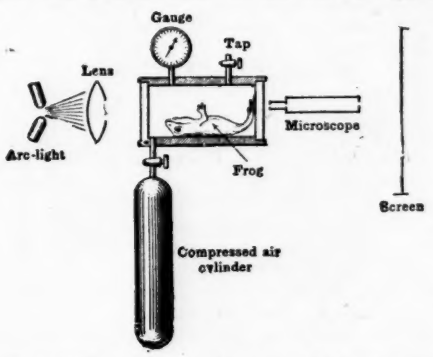


Fig. 2.—Circulation in frog's web demonstrated under pressure.

The reflex action, the response of the nerves to excitation, the beat of the heart, are all unchanged. But 400 atmospheres' pressure for two hours entirely destroys the microscopic structure and abolishes excitability altogether. Furthermore, the question is one of time as well as of pressure. A frog with the skin intact will stand ten minutes at 500 atmospheres without much hurt, but with the skin off, the nerves and muscles are destroyed in that time, becoming opaque in appearance, and showing on microscopic examination that the muscle fibres have broken in places, and the cross striations have been destroyed. From the nerve fibres the myelin can be teased out in droplets quite easily and the empty sheath left. The nature of the skin protects certain animals. For example, a gnat's larva survived two hours at even 700 atmospheres, but was killed in a similar time at 900 atmospheres. Oysters survived an exposure to 700 atmospheres for ten minutes, but were killed, as was shown by their shells gaping open and by their opaque appearance, after a brief exposure to double that pressure.

All our experiments go to prove that life is destroyed by several hundred atmospheres of water pressure, the water apparently becoming of such a concentration as to destroy the chemical structure of the living protoplasm. These experimental results are to a certain extent contradictory to those obtained by deep-sea soundings, for many forms of life, fish and otherwise, have certainly been found at depths of two or three miles. If life exists at the greatest depths, where the pressure may be a thousand atmospheres, we may be sure that the protoplasm has become evolved in such a way as to be immune to the high pressure of water. By means of a small chamber fitted with transparent windows, together with a hydraulic pump, I have been able to submit goldfish, which possess a swim-bladder, to

a thousand pounds of pressure within a few seconds and to observe their behaviour. They sank like a stone to the bottom immediately, owing to the sudden compression of the swim-bladder. After a time, having adjusted the amount of gas in the swim-bladder—no doubt by secretion—they began swimming about again, unharmed by pressure. I have also projected on the screen the shadow of the beating heart of a frog, submitting it to 50 atmospheres. The delicate structure of the heart continued to carry out its rhythmic beat unaffected by this enormous and sudden alteration of pressure. Similarly, muscle contracts normally when suddenly submitted to a pressure of air equal to 50 atmospheres. It is true that after a time the contraction languishes, but this is not due to pressure *per se*, but to poisoning by the high pressure or concentration of oxygen. The mechanical theories of compressed air are also refuted by this experiment. I stretched the frog's web over the glass window of the small pressure chamber and illuminated it by the arc light, so that the circulation of the blood was projected on to the screen. I found that the circulation remained unchanged on the pressure being rapidly raised by 20 or even 50 atmospheres. The manometric records of blood pressure taken from mammals show no noteworthy change when the pressure is raised to 3 atmospheres.

In the helmet of the diving-dress which, by the kindness of Messrs. Siebe Gorman and Co., I am able to demonstrate this evening, there is an inlet valve con-

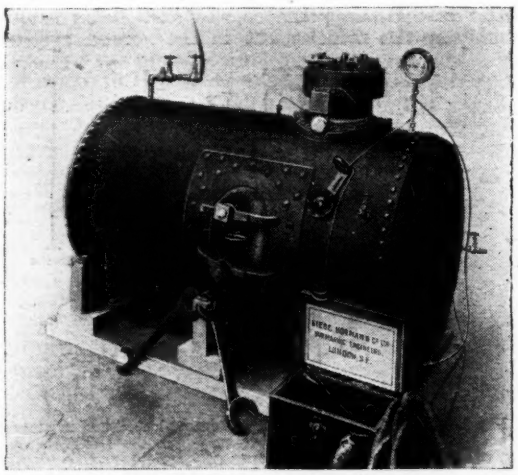


Fig. 3.—Experimental chamber. The photograph was taken when Mr. Greenwood was inside.

nected with the pump by the air-pipe and an outlet valve. The air pumped into the dress keeps the water from entering at the wrist-cuffs, and the whole body remains dry, warm, and equally compressed. By means of the outlet valve the diver can adjust his specific gravity so that he is only slightly heavier than the water and can move easily along the bottom. He fills his dress more or less with air just as a fish fills its swim-bladder. He can go down rapidly, 100 ft. in two minutes, but it is dangerous to fall down, for if the pump does not keep up with the water pressure a cupping effect is produced and the diver may suffer haemorrhage from the lungs. If the dress becomes over-filled with air—and this may happen when the men who are pumping send down too large a quantity—the diver is blown up to the surface, and in the case of the old style of dress he may become helpless and unable to open his valve, arms and legs being blown stiffly out. To prevent this accident, in the new diving-dress the legs are laced up. The helmet also is provided with an emergency valve or spit-cock, which the diver can open and thus let out excessive air.

Divers have in the past been unable to stay down for any length of time at the greater depths owing to a feeling of oppression, which they have ascribed to the pressure of the water. Mr. Major Greenwood and I have exposed ourselves in our compressed air chamber to + 92 lb. (7 atmospheres) and to + 75 lb. (6 atmospheres) respectively, and we have found the breathing to be just as free and easy as at atmospheric pressure. Beyond an increased nasal twang of the voice no symptoms were produced, and there were no signs by which the pressure could be estimated. Dr. John Haldane has done good service by proving that the oppression is due to an increased partial pressure of carbonic acid in the helmet owing to deficient ventilation. It is not the percentage, but the absolute pressure of the carbonic acid which controls the breathing. There is normally about 5 per cent. of an atmosphere of carbonic

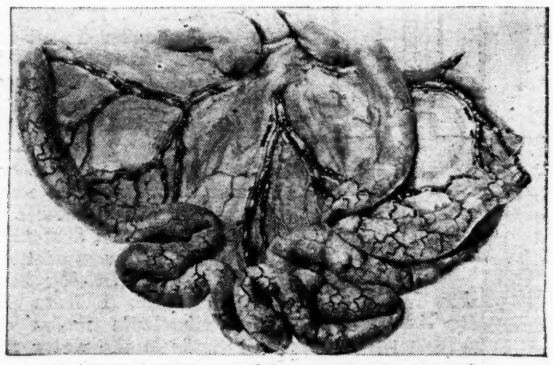


Fig. 4.—Bubbles in vessels of mesentery (v. Schrötter).

acid in the lungs, and the respiratory centre so works as to keep the partial pressure always the same. Thus, while in our lungs at 1 atmosphere we found 5 per cent. carbonic acid, at 5 atmospheres we found on analysis 1 per cent. But the partial pressure was 1×5, so that the proportion still remained 5 per cent. of an atmosphere. In order to keep the carbonic acid in the helmet down to a bearable concentration it is necessary that the same volume of air should be sent through the helmet, the volume being measured at whatever pressure the diver happens to be subjected to—that is to say, at 2 atmospheres the amount of air, adequate at 1 atmosphere, which is driven down to the diver must be doubled, at 3 atmospheres trebled, at 6 atmospheres increased six-fold. Under the old conditions of working, often with leaking pumps and tired men to pump them, the ventilation has generally been actually less than at atmospheric pressure, not six times greater, as it ought to be at a depth of 165 ft. A small increased partial pressure of carbonic acid, even up to 2 or 3 per cent. of an atmosphere, will not stop the diver from doing efficient work; but at 4 or 5 per cent. of an atmosphere the pulmonary ventilation is increased from 200 to 300 per cent., and if the diver is working hard, his breathing will become distressing and the feeling of oppression intense.

In order to get adequate ventilation at deep pressures several pumps must be linked up together, and a great many men are required to keep them working. To avoid this excessive labour, Mr. R. H. Davis (of Messrs. Siebe Gorman and Co.) and I are at present engaged upon an improvement of the diving helmet which will enable the

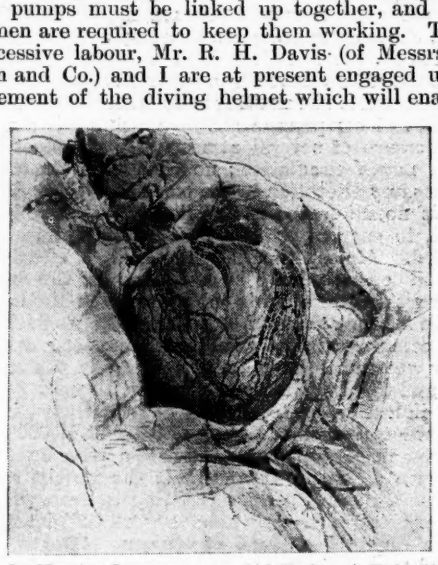


Fig. 5.—Heart and coronary vessels full of gas (v. Schrötter).

diver to do efficient work at deep pressures even when only one pump is employed. This device ought to save a good deal of hard pumping work. We have also contrived the self-contained diving dress which I demonstrate to-night. It is fitted with cylinders containing compressed air enriched with oxygen to 50 per

cent., and it has a caustic soda chamber. The oxygen supply is delivered 5 litres per minute to the helmet by a reducing valve, and the force of the oxygen stream is utilized by means of an injector to circulate the air in the helmet through the caustic soda chamber. No life-line or air-pipe is carried, only a light telephone cable, and this makes the dress suitable for the exploration of flooded mines, tunnels, shafts, etc., through which it is

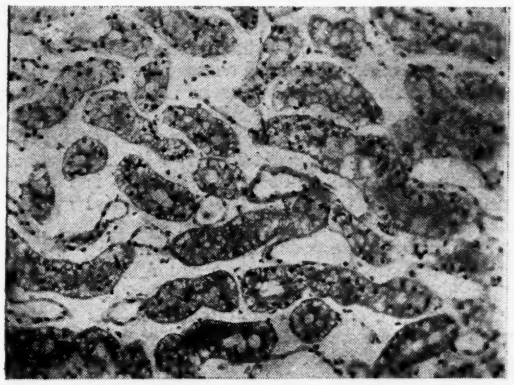


Fig. 6.—Capillaries of kidney full of gas. Bubbles in the tubules taking the place of fat droplets

impossible for the driver to carry great lengths of heavy air-pipe and life-line. Air containing 50 per cent. of oxygen is used in place of pure oxygen, in order to avoid the risk of oxygen poisoning.

I come now to the cause of compressed-air illness. In all the great compressed-air works from first to last the men have suffered from illness and loss of life; there is no risk in going into or staying in a caisson. As Pol and Watelle said, "*On ne paie qu'en sortant.*" These observers gave particulars of 64 workers who were employed in the sinking of a coal shaft through wet soil at an absolute pressure of 4¼ atmospheres. There were 14 cases of slight illness, 16 cases of more or less severe illness, and two deaths. At the St. Louis bridge works, out of 352 workers there were 119 cases of illness, 56 being cases of paralysis, and 14 deaths. The absolute pressure reached 4⅓ atmospheres. In the East River tunnels at New York—one of the greatest works undertaken with compressed air, but carried out under well-regulated conditions—the percentage of illness was 0.66, and of death 0.0035, in 557,000 man-shifts. The absolute pressure employed was 3 atmospheres. Out of the 3,692 cases at these East River tunnels over 88 per cent. were of the kind known as "bends"—that is, severe pain in the joints and muscles—1.26 per cent. gave symptoms of pain and prostration, 2.16 per cent. nervous symptoms, 5.33 per cent. vertigo, 1.62 per cent. dyspnœa and oppression, called "chokes," and 0.46 per cent. loss of consciousness and collapse. The number of deaths was 20. Yet mules which were kept for a year in the Hudson tunnel at 3 atmospheres' pressure were healthy enough to kick and bite at all comers, so that it is clearly decompression, and not exposure to pressure, which causes the trouble.

Fig. 7.—Liver cells blown out by gas bubbles.

The cause of the illness which has such a protean manifestation was suggested by Hoppe-Seyler and made clear by Paul Bert, the latter showing by experiments on animals that nitrogen gas is dissolved in the blood and tissue fluids in proportion to the pressue of the air, and that the dissolved gas on too rapid decompression bubbles off and effervesces in the blood of animal or man. The bubbles, by blocking up the capillaries and cutting off the blood supply here and there, produce the symptoms. Exposure to high atmospheric pressure has no ill effect until the pressure becomes so great that the partial pressure or concentration of oxygen acts as a tissue poison. The illness which occurs on decompression is prevented by making the period of decompression sufficiently slow to allow time for the dissolved nitrogen to escape from the lungs. When Robert Boyle submitted animals to the action of his air-pump, he observed that bubbles of air might be set free in the blood, aqueous humours, etc. And in these experiments we find the germ of the discovery which was completed by Paul Bert. It is astonishing how the researches, published by this renowned scientist in a volume of many pages, were almost totally neglected by engineers and the medical officers of their caisson works, both in this country and in America. When I began the investigation of the subject some fifteen years ago I discovered that Paul Bert's work was almost unknown, and that the causation of compressed-air sickness was generally attributed to causes entirely at variance with physical laws and physiological facts. I myself had independently carried out many experiments which proved that the cause of the illness was due to the setting free of bubbles of nitrogen after decompression, without being aware of the fact that similar experiments had previously been made by Paul Bert, so that the same conclusions were independently reached by me. Exposed to 1 atmosphere at body temperature, the blood dissolves a little less than 1 per cent. of nitrogen; at 2 atmospheres 2 per cent., at 3 atmospheres 3 per cent., and so on. The tissue fluids take up the dissolved gas in the blood, and with time the whole body becomes saturated. This process of saturation takes a certain time, since the blood forms but 5 per cent. of the whole body weight, and the blood must carry the nitrogen from the lungs to the tissues. Probably some 5 kg. of blood circulate through the lungs per minute, and this blood conveys the dissolved nitrogen to a tissue weight of 60–80 kg. Vernon has shown that fat dissolves some five or six times as much nitrogen as water, and the discovery of this important fact makes it clear to us that the fat man will dissolve far more nitrogen than the lean man and become saturated much more slowly. On decompression, the reverse process has to take place. The excess of nitrogen dissolved in the tissues must be carried back by the blood to the lungs and there make its

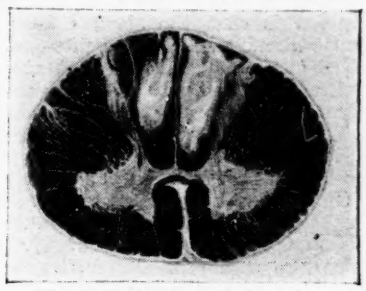


Fig. 8.—Lesion in posterior columns of cord produced by air embolism (v. Schrötter).

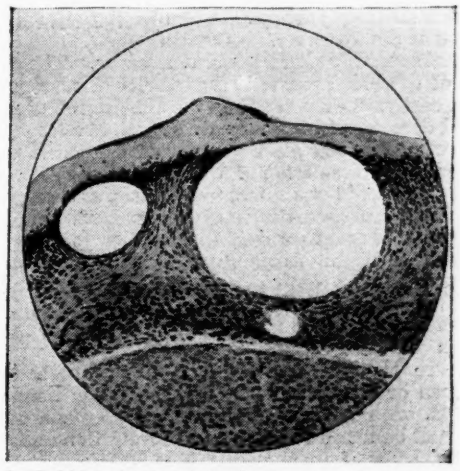


Fig. 9.—Bubbles of oxygen in brain of mouse compressing cerebral cells. Decompression from 12 atmospheres O_2. Mice can recover from such, the O_2 being absorbed.

escape. If the decompression is made too rapidly for this to take place, the supersaturated blood and tissues may give up their nitrogen in the form of bubbles. It is clear, therefore, that fat men must be eliminated from all high-pressure work. Out of 30 autopsies which have been done on fatal cases of caisson illness, gas bubbles have been visible in the blood vessels in 19 instances. Most of the other cases were old-standing lesions of the spinal cord. The paralysis so often produced is due to the local death and degeneration of the spinal cord owing to the blocking of the circulation there by the bubbles.

One of the proofs that the nitrogen gas is so dissolved is that the blood collected from the artery of an animal while under pressure, when analysed with the gas pump, shows that the amount of dissolved nitrogen varies with the pressure—roughly speaking, we found 1 per cent. per atmosphere. We have exposed rats to 10 or 20 atmospheres, killed them by instant decompression, then opened their bodies under water and collected and analysed the gas which has been set free. We found from 6 to 16 per cent. of carbonic acid, a trace of oxygen, and 80 to 87 per cent. of nitrogen, the volume of nitrogen corresponding roughly to the saturation at the pressure employed. Major Greenwood and I have tested upon ourselves the rate of saturation, using the urine as a test fluid. We were compressed in a large boiler placed at our disposal by Messrs. Siebe Gorman and Co., who have generously helped us in our researches. The chamber was fitted with electric light, telephone, and taps for slow decompression. The pressure was raised by means of a diving-pump driven by a gas-engine. Having found out what was safe for animals, we exposed ourselves to the same kind of tests, and spent as long a time as seven hours enclosed in this steel prison which I demonstrate now upon the screen. We drank a quart of water, and some half an hour afterwards, when the kidneys were freely secreting, we collected samples of urine at varying pressures and times. The urine collected in sealed bulbs was evacuated by the gas pump, and we found that the urine secreted during the next ten minutes after reaching any given pressure was saturated with nitrogen at that pressure. But in spite of slow decompression we often found that our urine was still supersaturated as we came out of the chamber. A certain amount of supersaturation is not dangerous. The colloidal nature of the blood prevents the bubbles of nitrogen from forming easily. To demonstrate the bubbling off of nitrogen on rapid decompression, I spread the web of a frog's foot or a bat's wing over the glass window of the small pressure chamber. The circulation of the blood is projected on the screen with the aid of a microscope and an arc light, and we are able thus to observe the circulation under 20 atmospheres of air pressure and to watch the bubbles forming in the capillaries on rapid decompression. We are able to see that recompression diminishes the size of the bubbles and finally drives them back again into solution. When the larger mammals, such as cats and dogs, are exposed to the high pressure of, say, 8 atmospheres for an hour or so and are then decompressed in a few seconds, they die in one or two minutes. On the other hand, small mammals, such as mice and rats, may escape owing to their small bulk and to their rapid respiration and circulation. The heart of a mouse may beat 700 times per minute as against our own 70. Paralysis in the limbs follows too rapid decompression, or the animals fall over and become unconscious. The gurgling of gas bubbles in the heart may be heard, respiration becomes embarrassed, and the animals die. On dissection the peritoneal cavity may be found distended with gas, or the gas may be confined to the stomach and intestines. Some of the gas rises in the fermentative processes of digestion and from air swallowed during compression. Such gas may possibly be the starting point for the setting free of bubbles in the blood, and it is therefore important that men suffering from flatulence should not work in high pressures. The vessels, both arteries and veins, may show chains of bubbles, as exemplified in the photograph I am able to produce of the coils of the intestines and the mesenteric vessels. The bubbles are seen in the fat, the joints, the veins of the brain, etc., and the coronary vessels. The right side of the heart itself may be distended with them. The gas in the heart produces embolism of the pulmonary vessels, obstructs the circulation, and brings about sudden death. In the larger animals, when decompressed from eight atmospheres in five seconds, we have found the cells of the liver, kidneys, etc., vacuolated or even burst with bubbles. We have collected gas set free in the heart, and found about 80 per cent. of it to be nitrogen. The bubbles may take a long time to form, and if they form only in the fat and veins and in such organs as the liver they may do little harm, but if they are swept on into the heart and pulmonary circulation or enter the arterial system and block up the vessels of the brain and spinal cord, then it is manifest that the symptoms will be grave.

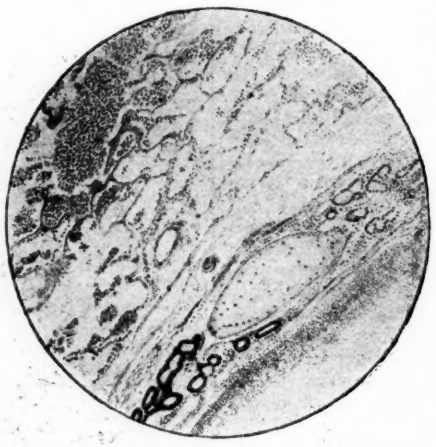


Fig. 10.—Section through wall of bronchial tube and pulmonary alveoli. Showing inflammation produced by exposure to four atmospheres of oxygen.

Among caisson workers some are affected and others not, and immunity is not given by continued work in compressed air. We may look for the explanation in such phenomena as the varying state of the blood, the varying vigour of the circulation and respiration which are affected by fatigue and by vasomotor changes during compression when the air is chilled, fermentative processes going on in the alimentary tract, and the relative amount of fat in the individual. A young man in perfect health, wiry, small, and spare, with powerful heart and deep respiration, can expel the dissolved nitrogen from his lungs far more readily than the old, the intemperate, the stout, and those who are over-fatigued by excessive labour. The records of caisson workers show that men under 20 generally escape, and that the percentage of cases is highest for men over 40. The longer the shifts the more complete the saturation of the body, and the higher the pressure the greater will be the risks and the gravity of the symptoms. The men who work the air-locks and, in passing material through, undergo frequent but brief compression and decompression are not affected. The records show that practically no cases occur at a pressure below 2 to 2½ atmospheres absolute.

Much has been made of the impurity of the air—in particular of the percentage of carbonic acid—as a contributory cause of caisson sickness. The ventilation of the tunnels built by the London County Council under the Thames has been carried out at an increased and, in my opinion, needless expense in order to keep the carbonic acid percentage down to a very low level. Recently I have carried out many experiments on ourselves and on students, who have been sealed up in a small air-tight chamber, and I have found—like Fluegge and his school in Germany and Haldane in this country—that it is the heat, moisture, and stillness in the air which cause discomfort and fatigue, and not excessive CO_2, deficiency of oxygen, or any supposed organic poison in the air breathed. There is no evidence standing the criticism of investigation to prove, or even to make it likely, that there is any organic chemical poison exhaled in the breath. In the absence of any toxic gases, such as an escape of coal-gas or other trade product, the problem of ventilation becomes a question of movement, heat, and relative moisture of the air. It is these latter qualities of the air which affect the skin and respiratory tract, and, through their influence upon the vast area of cutaneous nerves, give us feelings of comfort or discomfort. In open-air treatment the coolness of the air and its movement are the essential qualities which promote health by stimulating activity and metabolism and the nervous well-being of the body. Hot, moist air causes fatigue by taxing the cooling mechanism. Blood which might be going through the viscera, muscles, and brain is sent to the skin to be cooled. A rapid heart-beat has to be maintained, and this fatigues the heart.

The fatigue, increased by a hot, moist atmosphere, makes greater the danger of decompression. Heat causes more blood to come to the skin and brings about a more complete saturation of the subcutaneous fat with nitrogen. The cold in the decompression chamber, due to the expansion of the air, causes vaso-constriction, impels the blood from the skin, and stops its desaturation. The money spent on excessive ventilation really raises the heat of the caissons, for compressed air is heated by the compression, and it would be better spent in the cooling of the caissons. To secure efficient work the wet bulb temperature should be kept below 70° F. The men should not pass from a warm caisson to a cold air-lock and a cold outer world. They should go through a warm air-lock to a warm room. An excess of CO_2 in the air-lock or diver's helmet during decompression—by "excess" I mean 2 or 3 per cent. of an atmosphere—is favourable, as it increases pulmonary ventilation and the out-breathing of nitrogen. The safety of compressed air workers depends upon the relation of the period of decompression to that of compression. The proper periods of compression and of decompression have been worked out in an extensive series of experiments on goats by Haldane, Boycott, and Damant, and on pigs and goats by Major Greenwood and myself. We chose the pig as being in shape, diet, and habit of body—and perhaps in habit of mind!—more like to man than the goat. The Admiralty now use a table regulating the descent, working period, and decompression of the diver, which is based very largely upon experiments on animals, and the use of this table has prevented all serious accident. The decompression periods given in this table can be shortened considerably if active exercise is taken, for by this means the ventilation of the lungs and the rate of the circulation can be increased, perhaps, by six times. When

Table showing Dissolved Gas in Urine when (1) Air, (2) Oxygen, was breathed during Decompression.

I. Breathed air at 3 atmospheres. After 15 minutes emptied bladder. Sample I collected 7 minutes later at 3 atmospheres. Decompressed to 1½ atmospheres in 3 minutes. Sample II collected 6 minutes later at 1½ atmospheres. Decompressed to 1 atmosphere in 3 minutes. Sample III collected 3 minutes later at 1 atmosphere.

	Nitrogen.	Oxygen.	Pressure Atm.	Nitrogen calculated (0.85 per atm.)
Sample I	3.054	0.153	3	2.55
Sample II	2.859	0.144	1½	1.416
Sample III	1.009	0.81	1	0.85

II. At 3 atmospheres for 44 minutes. Emptied bladder and breathed oxygen for 9 minutes, then took sample I. Decompressed to 1½ atmospheres in 2 minutes. Took Sample II 4 minutes later. Decompressed to 1 atmosphere in 1½ minutes. Took Sample III 5 minutes later.

	Nitrogen.	Oxygen.	Pressure Atm.	Nitrogen calculated.
Sample I	3.061	0.297	3	2.55
Sample II	0.8845	0.1965	1½	1.416
Sample III	0.5751	0.0941	1	0.85

doing hard work in the caisson a man rapidly saturates himself with nitrogen, and it is very disadvantageous that he should sit quietly in a cold air-lock during decompression, with heart and respiration working at low level owing to fatigue. By arranging air-locks so as to give staged decompression, and making the men climb out of the tunnel from one air-lock to another, they can be made to do hard work, and the work itself helps to wash the nitrogen out of their bodies, and thus very greatly increases the safety of decompression.

Another means by which the decompression period can be shortened with safety is by the breathing of oxygen. If oxygen is breathed at the full pressure just before decompression there will be a vacuum for nitrogen in the lungs, while the pressure will prevent any bubbles of nitrogen from forming in the tissues. Unfortunately, high pressures of oxygen act as a poison. Four atmospheres of oxygen convulses animals in from 30 to 60 minutes, and causes inflammation of the lungs. Bornstein and other engineers have breathed oxygen for 30 minutes at a pressure of 3 atmospheres. Such a period is the limit of safety. Oxygen can be breathed economically by means of the Siebe Gorman apparatus for use in mines, and I demonstrate this apparatus in use this evening. At the Howe Bridge rescue station squads of miners are trained in its employment, and the efficiency and utility of the dress was fully demonstrated in the recent great colliery explosion at Bolton. J. F. Twort and I have investigated the effect of the breathing of oxygen on the volume of nitrogen dissolved in the urine. Precautions were taken to collect the urine without contact with the atmosphere. A large quantity of water was drunk so that samples of urine could be collected every seven minutes or so. The oxygen apparatus was taken into the chamber and the oxygen breathed at 3 atmospheres of pressure just before and during decompression. Our results show that while the urine is supersaturated after decompression in twelve minutes when no oxygen is breathed, it is under saturated after the breathing of oxygen.

It may be possible in deep-sea diving work, as in the pearl fisheries, so to arrange a supply of hydrogen and oxygen that the diver may breathe such a mixture during decompression in great depths. As he comes nearer to the surface the hydrogen supply will be cut off, and he will be given oxygen only. The hydrogen is used to prevent oxygen poisoning (v. Schrötter). The ideal method for safe decompression in high pressures, which has been worked out by experiments on animals, is rapid decompression to some two atmospheres of pressure, and then a pause, during which oxygen is breathed and exercise taken, followed by gradual decompression to one atmosphere, while oxygen breathing and exercise are continued.

Paul Bert proved that the one method of cure for the illness is recompression. Caisson workers suffering from "bends" have found relief by going back under pressure. Recompression chambers or medical locks are now instituted at all large caisson works. Experiments on animals show that recompression must be applied very quickly in dangerous cases before vital parts are killed by the interference of the bubbles with the circulation. "Bends" may be relieved hours, or even days, after they have come on. Recompression cured 90 per cent. of the cases

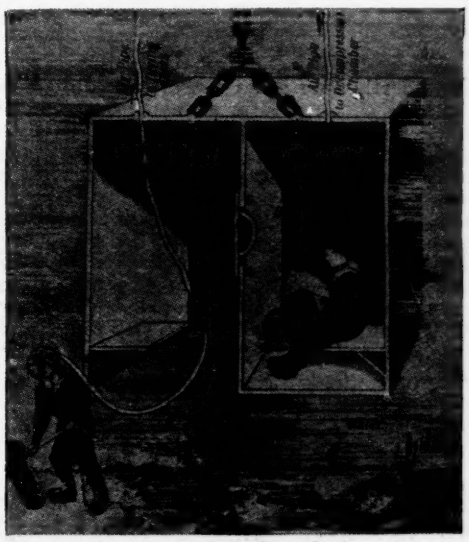


Fig. 11.—Diving bell with air-lock for decompression of divers.

in the East River tunnel, and all but 0.5 per cent. were partly relieved by this means. Oxygen breathing can be employed with advantage in a medical lock. Decompression from the medical lock after the cure is effected must be very slow, for some of the bubbles, having run together to form larger bubbles, only shrink on recompression, and do not quickly go into solution. These may expand again on decompression. For deep-diving work a recompression chamber should be at hand. I have contrived a double-chambered diving-bell, one chamber being open to the sea and the other closed save for a manhole communicating with the first. The divers, after completing their work, enter the inner chamber and close it, the bell is raised on deck, and the man is decompressed a stage further. Such a contrivance prevents exposure to the cold during slow decompression in the ordinary way when the diver climbs a shotted rope. It also eliminates the risk of the prevention of gradual decompression by bad weather.

I hope that I have now given you sufficient details of these researches to make it clear that the workers on this subject in this country and abroad have done much to perfect a safe method of carrying out work in compressed air by scientific investigations carried out on animals, and that the fruits of their labours have a great economic importance. A full account of these researches and of work in compressed air will be found in my book on caisson sickness, now in the press (Arnold).

ON ARTIFICIAL RESPIRATION WITH OXYGEN.

BY

SIR LAUDER BRUNTON, BART., M.D., F.R.S.,

CONSULTING PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

SHORTLY after the discovery of oxygen by Priestley in 1774 it was used in many diseases, and at first, like most new remedies, it was said to be exceedingly successful. Further observations, however, showed that it was not so useful as at first supposed. It has continued to be used more or less ever since, but one of the great difficulties has been that of obtaining it in a convenient form for clinical use.

When making experiments with it as a means of preventing death from cobra venom, Sir Joseph Fayrer and I. in 1874, obtained it in a small gasometer, but our supply unfortunately ran out in the middle of one experiment. We then had it in a large gas bag, and this was more successful but was very inconvenient for carriage.

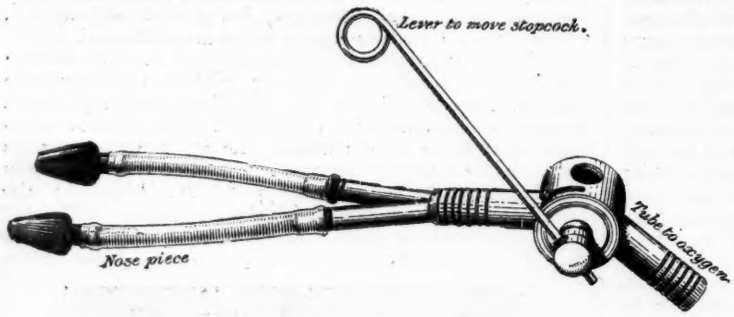


Fig. 1.

In 1891 Dr. Prickett and I had a case of pneumonia in which we used oxygen compressed in a cylinder, with very gratifying results. The publication of this case[1] appeared to give an impetus to the use of oxygen. Numerous papers on its use appeared shortly afterwards in medical journals, and it has continued to hold its place ever since. In one case of pneumonia which I saw with Dr. John Attlee, as one lung was clearing up the other became consolidated, and it seemed to be simply a race for life to get a sufficient amount of breathing space in the clearing lung before too much of the other became useless. In this case we kept up a continuous inhalation of oxygen day and night from cylinders connected to a funnel, which was suspended a few inches above the patient's nose and mouth. The results here were also very satisfactory; without oxygen the patient must almost certainly have died.

Sometimes patients complain of the oxygen feeling dry or cold. This difficulty can be got over by passing the gas through a Woulfe's bottle containing warm water, and kept from cooling either by hot cloths or by immersion in a basin of hot water. To this, in cases of bronchitis, tincture of benzoin, pine oil, or other expectorants may be added. In cases where a diffuse stimulant is required alcohol or ether or a mixture of both may be put into the Woulfe's bottle or into a Junker's inhaler. In cases of angina pectoris amyl nitrite may be given with oxygen, either by dropping it into a Junker's inhaler with alcohol or by simply putting a drop or two on cotton-wool and placing it in a funnel before the patient's nose. Ethyl iodide may be given in the same manner in asthma.

The effect of oxygen sometimes as a cardiac stimulant is very extraordinary. Some one, I think Sir Douglas Powell, has well said the heart is the organ which first takes toll of the oxygenated blood returned from the lungs, and in a case of cardiac asthma I found the tension in the radial artery, which was only equal to 75 mm. of mercury when the inhalation of oxygen was begun, rose to 150 in the course of ten minutes. When natural respiration has completely ceased artificial respiration with oxygen may be kept up for some time by simply placing the end of an india-rubber tube passing from the oxygen cylinder into the patient's nostril, at intervals corresponding to the natural respirations, either with or without compression of the other nostril. The force of the gas issuing from the cylinder is sufficient to inflate the lungs, and when the tube is removed from the nostril the gas is again expelled from the chest by the natural resiliency of the chest wall, aided, if necessary, by gentle compression.

I demonstrated an instrument for keeping up artificial respiration with oxygen at the International Medical Congress in Rome, 1894, but the account which appeared in the reports[2] was not illustrated and attracted very little attention either at the time or afterwards. I think it may therefore be worth while to describe it again with illustrations to show its working. The instrument itself is shown in Fig. 1. It consists of a stopcock of peculiar construction which is connected by an india-rubber tube at one end to the cylinder containing oxygen, and at the other terminates in two nozzles which pass into the nostrils. By moving a short lever the nostrils are alternately put into communication with the oxygen cylinder and with the open air, so that, by moving the lever alternately backwards and forwards, artificial respiration is kept up with the minimum of exertion, so that it might be continued if necessary for hours. Fig. 2 gives a general view of the arrangement of the apparatus with sections of the stopcock at A and B. In A the stopcock is shown with the communication free between the lungs and the air, and the communication with the oxygen cylinder is closed, this being the position in expiration; B shows the position in inspiration when the oxygen streams from the cylinder into the lungs and the opening which communicates with the outer air is closed.

In the illustration the stopcock is represented as being directly connected by tubing with the oxygen cylinder, but in order to prevent the tubing being blown off, or other unpleasant surprises from too great pressure of the oxygen, it is advisable to insert a large distensible bag between the stopcock and the cylinder. If necessary it may be weighted by laying books upon it, so as to obtain the pressure required.

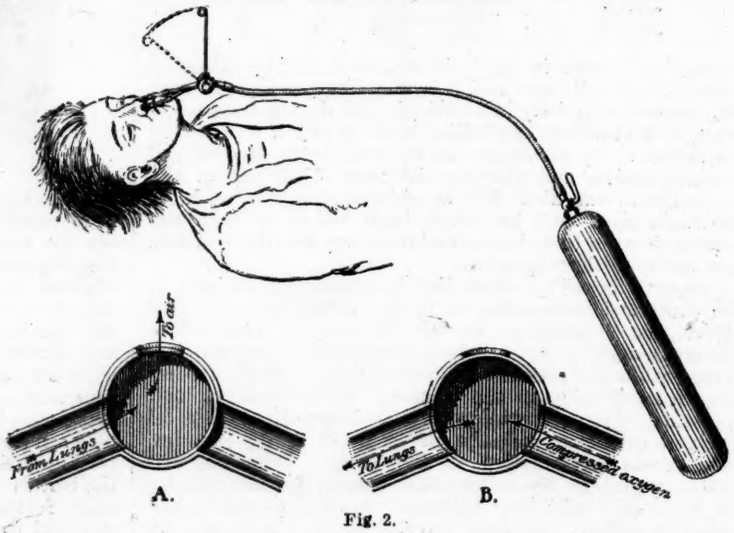


Fig. 2.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, January 23rd, 1892. [2] Atti dell' XI Congresso medico Internazionale, Roma, 29 Marzo–5 Aprile, 1894.

THE German Roentgen Society will hold its eighth annual meeting this year at Berlin on April 14th. There will be a demonstration on the evening of April 13th. Communications relative to the Congress should be addressed to the secretary of the society, Dr. Immelmann, Berlin W. 35, Lutzowstrasse 72.

INTRINSIC CANCER OF THE LARYNX:

*OPERATION BY LARYNGO-FISSURE: LASTING CURE IN 80 PER CENT. OF CASES.**

BY

STCLAIR THOMSON, M.D., F.R.C.P.LOND., F.R.C.S.ENG.,

PROFESSOR OF LARYNGOLOGY AND PHYSICIAN FOR DISEASES OF THE THROAT IN KING'S COLLEGE HOSPITAL; PHYSICIAN TO KING EDWARD VII SANATORIUM, MIDHURST.

FEW clinical classifications are more useful than the one made by Krishaber when he suggested that cases of cancer of the larynx may be divided into two groups according to the anatomical site of origin of the disease.[1] He gave the name of "intrinsic cancer" to all cases where the disease is found to start from the vocal cords, the ventricles, the ventricular bands, the interarytenoid region, and the subglottic area. When cancer originates in any other points of the larynx—the epiglottis, arytenoids, aryepiglottic folds, and the pharyngeal surface of the cricoid—Krishaber preferred to call it "extrinsic cancer." Now, this classification is of the greatest clinical importance, for, while extrinsic cancer is, according to Butlin,[2] "a dire disease," seldom operable, offering only a chance of cure with the generally crippling operation of laryngectomy, and giving a statistical table of lasting arrest which is in no way encouraging, it is quite otherwise with intrinsic cancer. Semon has frequently called attention to the evidence we now possess that there is probably no other region of the body where operation for cancer can show anything like the satisfactory results that can be obtained when the disease occcurs in the interior of the larynx and is removed by laryngo-fissure. His own practice shows a lasting cure in 80 per cent. of his cases.[3] I imagine that the statistics of operation for epithelioma of the lips may show a better result; but I believe that when any other region, and particularly an internal organ, is attacked with this dreadful disease, no such hopeful prospect can be entertained.

In spite of the pioneer work performed by Butlin and Semon in this country, and carried on by Chevalier Jackson, Moure, Schmiegelow, Chiari, Koschier, and others abroad, it is regrettable that many members of the profession still fail to appreciate what can be done for the cure of cancer when it attacks the interior of the larynx. It is deplorable to note how often cases fail to present themselves until the intrinsic disease has been allowed to spread until it became extrinsic, and too extensive to be operable. Such extrinsic cases are certainly more common in the out-patient room, yet Semon says that of the two classes of laryngeal cancer the intrinsic form is the more common. In 212 cases seen by him the cancer was intrinsic in 136, and extrinsic or mixed in 76. Taking only his male patients, the divergence was more marked—namely, 124 intrinsic compared with 53 extrinsic—for it is well known that the extrinsic is the more common form in women. Chevalier Jackson's careful figures show that the more hopeful form (that is, intrinsic) is more frequent in the proportion of 98 to 43.[4]

One reason why statistics and reports of cases are not more frequently forthcoming is that they do not come to the laryngologist until, in many cases, they are too advanced for operation. A second reason is that cancer in the larynx is not a common disease; Semon, whose expperience was very extensive, saw 212 cases in private patients in twenty-eight years, and of these 136 were intrinsic. He rightly claims that, with Butlin, he had been fortunate in having exceptional opportunities of treating laryngeal growths surgically, yet his gratifying results were obtained on a record of only 25 laryngo-fissures for cases microscopically verified as undoubted malignant growths.

This comparative rarity of intrinsic laryngeal cancer is the second reason which helps to explain why, this evening, I cannot submit the results of more than ten cases. But our records will continue to deal with comparatively small numbers until the public and the profession realize the importance of early diagnosis of every case of persistent hoarseness, and see, from such gratifying results as these I am now able to submit, that intrinsic cancer of the larynx is one of the most favourable manifestations of malignant disease, allowing of a lasting cure in a very large majority of cases submitted to the laryngologist for suitable operation.

Cases.

The ten cases were operated on between the years 1900 and 1910—a period of ten years. I give the abbreviated notes of them in chronological order:

CASE I.

Mr. W. T., aged 47. April 23rd, 1900: Huskiness for three months. Limited, non-ulcerated thickening of middle third of right vocal cord, which moved freely. By August 4th the thickening was more defined—a distinct truncated cone with a cornified, white extremity. Although cords moved freely and no glands could be felt, the suspicion of a malignant growth was now confirmed and endorsed by Sir Henry Butlin, who operated on August 14th, 1900. I saw the patient again in June and July, 1901, when his larynx was absolutely free from any recurrence of the disease. He was last seen by me on January 9th, 1902, when he presented himself with a gland the size of a pigeon's egg below the angle of the left jaw. The area of the left lingual tonsil was enlarged, congested, and very hard to the touch. His larynx was still quite clear—that is, seventeen months after operation. Hearing subsequently of his death, I wrote to Sir Henry Butlin, and received the following letter:

"1st July, 1904.

"My dear Thomson,

"I have no intention of publishing the case separately, and I should be very pleased indeed that you should do so.

"The operation, as you say, was on August 14th, 1900, and consisted in (something more than) the complete removal of the right vocal cord for an ulcerated epithelioma, which extended along almost the entire length of the cord, up to and just beyond the commissure. The disease was proved by microscopic examination to be epithelioma, and I think I still have the sections; indeed, I am sure I have them.

"In December, 1901, he came to me on account of an enlarged, hard, and fixed gland behind the angle of the jaw, on the left side, and I found that it was associated with induration, undoubtedly malignant, of the left border of the tongue, about, but a very little in front of, the lingual tonsil. The larynx was quite free from disease.

"You saw Mr. T., I think, about the same time, and formed a similar opinion of his case; and we both held the view that it was not a suitable case for operation.

"He came to see me at rare intervals; and I received a letter from his wife in 1903, telling of his death on the 26th of June of that year. . . . The larynx remained free, as I always found it, up to the time of his death, so far as any recurrence of the original epithelioma is concerned.

"Of course it is very disappointing that he should have suffered from, and succumbed to, an attack of similar disease in another near organ of the body.

"Believe me,

"Yours very truly,

"HENRY T. BUTLIN."

CASE II.

Mr. C. S., aged 49. September 20th, 1900: Huskiness for two years. The right vocal cord was entirely replaced by a dull red, ovoid, irregular growth, and the right side of larynx was quite immobile (Figs. 1 and 2). The diagnosis of epithelioma was clear, and was confirmed by both Sir Felix Semon and Sir Henry Butlin. October 10th, 1900: Operation, with the assistance of Mr. E. Stabb and Dr. F. Ford, chloroform being administered by Mr. Bellamy Gardner. Small gland met with in front of crico-thyroid membrane. Hahn's tube employed. All the right cord, with a good margin, was removed back to the processus vocalis, and the anterior portion of the left cord was also removed. The patient was able to swallow in twenty-

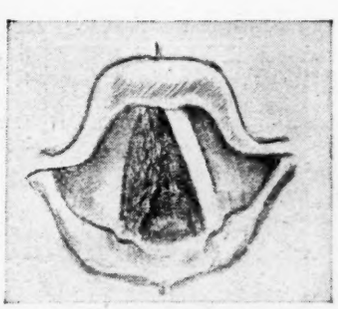


Fig. 1.—Case II. Dull red, ovoid, irregular growth replacing right vocal cord, which is fixed in cadaveric position.

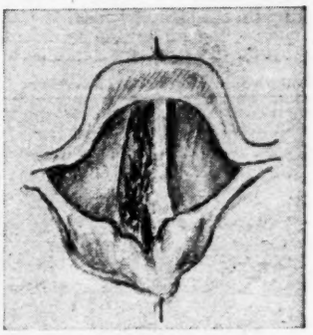


Fig. 2.—The same larynx, showing complete immobility of right cord during phonation.

*Paper read before the Medical Society of London on February 12th, 1912.

four hours, and at the end of forty-eight hours sat out of bed. Dr. Jobson Horne reported that the growth was a carcinoma, but that the removed portion of the left cord and the small gland were free from disease. Later on there was some compensatory thickening in the ventricular band on the operated side, and on June 3rd, 1901 (eight months after operation) the patient saw Sir Henry Butlin, who agreed that there was no suspicion of recurrence of malignant growth, nor was there any when I last saw the patient on November 18th, 1901, more than a year after operation. He wrote to me from Scotland in January, 1902, to say that as he was keeping well and suffering no inconvenience from his throat he had thought it unnecessary to call and report himself. I heard that he died suddenly in February, 1902, but beyond a statement that he had spasm of the glottis, I could not obtain satisfactory details.

CASE III.

J. K., aged 48, attended King's College Hospital on October 9th, 1903, for hoarseness of thirteen months' duration, due to a greyish, dimpled, sessile growth, occupying the anterior two-thirds of the left vocal cord (Fig. 3). A small gland existed below the angle of the right jaw. As the patient had been treated successfully in the Victoria Park Chest Hospital in 1893 by Dr. Heron with Koch's tuberculin, it was generally thought by members of the Laryngological Society of London that the case would prove to be tuberculous, although there were no other symptoms beyond arrested phthisis.[5] It was not until July of the following year (that is, 1904) that the increase of the growth, the infiltration of the cord, and the consequent interference with its movements, made me conclude it was an epithelioma. It is worth noting that the patient was kept under observation for nine months before the diagnosis was settled and had been hoarse for thirteen months previously. This long period of twenty-two months shows how slow the progress may be in the early stage of intrinsic cancer of the larynx, and also how difficult the diagnosis may be.

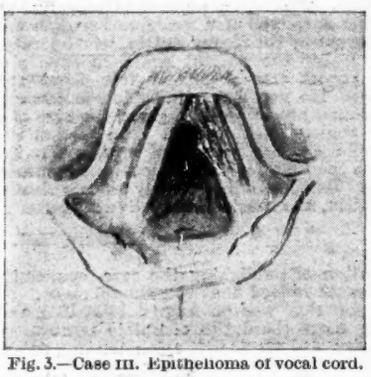
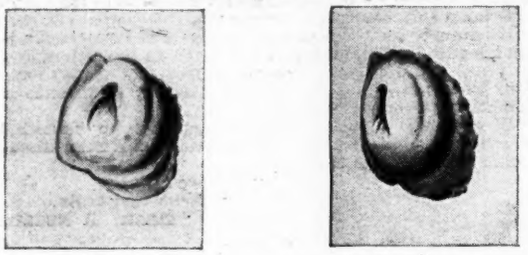


Fig. 3.—Case III. Epithelioma of vocal cord.

July 12th, 1904: Laryngo-fissure under chloroform (Fig. 4). Hahn's tube was used. The portions removed showed well-marked epithelioma, the tissues being so deeply infiltrated that from the purely pathological point of view the outlook would not be favourable.



A B

Fig. 4.—Case III. Two life-size drawings of the growth removed by laryngo-fissure.

Six weeks later a small thickening was noticed in the anterior commissure. As this developed into a pale, pedunculated growth, the size of a pea, it was removed with intralaryngeal forceps, and under the microscope proved to be a granuloma (Fig. 5). The patient's case is further reported in the *Proceedings of the Laryngological Society of London* for January 13th, 1905. He has successfully come through attacks of influenza, bronchitis, and pneumonia, and a fairly good voice has enabled him to carry on his occupation as a baker in the East End (Fig. 6).

He has now been seven and a half years free of recurrence of cancer.

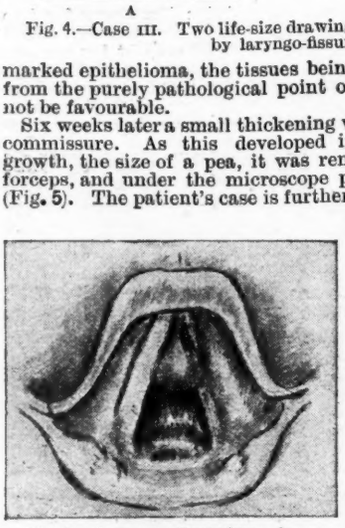


Fig. 5.—Case III. Granuloma in anterior commissure during convalescence.

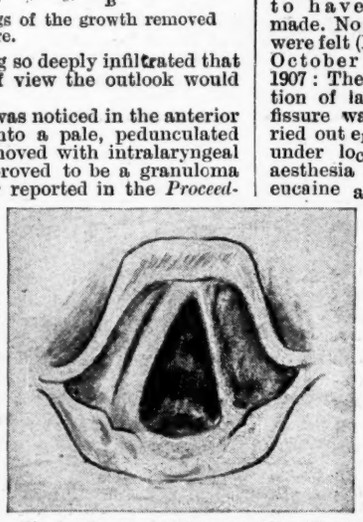


Fig. 6.—Case III. After operation. Showing new cicatricial and quite fixed left cord, with compensatory hypertrophy of left ventricular band.

CASE IV.

Sir W. D., aged 49. October 9th, 1906: Voice had been husky for six months. History of lues. No enlarged glands. The whole of the right vocal cord was replaced by a red, rough, irregular, ulcerating, mulberry-surfaced growth, which mechanically prevented complete approximation of the cords, although the intrinsic movements on the affected side did not at first appear to be interfered with (Fig. 7). However, at the end of a month, during which time the patient was submitted to anti-syphilitic treatment, the mobility of the right cord was failing, and the diagnosis of epithelioma was then confirmed by both Sir Felix Semon and Sir Henry Butlin. November 8th, 1906: Operation by laryngo-fissure, assisted by Mr. A. H. Buck of Brighton and Mr. E. Stabb, chloroform being administered by Dr. J. F. W. Silk. Hahn's tube was employed. Dr. Emery reported that the removed growth was an epithelioma with unusually malignant appearances. About eight weeks after operation the patient expectorated two pieces of bone, evidently ossified cartilage from the margins of the incision in the thyroid plate. The patient made a good recovery, and resumed an active life with a good strong voice. But in July, 1907 (that is, eight months after operation), there was a decided recurrence. As at that time I had just lost a nail from a septic right fore-finger, Sir Felix Semon kindly made an exploratory laryngo-fissure, but found the growth had invaded both thyroid alae, and was no longer suitable for laryngo-fissure. The case was then transferred to Mr. Burghard, who excised the whole larynx on August 14th, 1907, but the patient died of recurrence on July 13th, 1908, one year and eight months after his first operation.

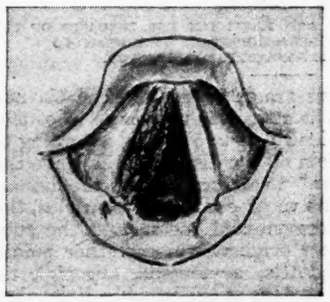


Fig. 7.—Case IV. Epithelioma of larynx.

CASE V.

C. L., aged 54, was admitted to King's College Hospital on October 4th, 1907, with partial loss of voice for over a year. The left vocal cord was entirely replaced by a nodular growth, greyish and white in parts, and in the anterior commissure there was a granulation strongly suggestive of perichondritis from invasion of the thyroid ala. The left side of the larynx was quite immobile. The condition is well shown in a coloured drawing which I was fortunate enough to have had made. No glands were felt (Fig. 8). October 17th, 1907: The operation of laryngo-fissure was carried out entirely under local anaesthesia with eucaine and adrenalin (eudrenine). Hahn's tube was not used. All the left cord and the soft tissues in the left half of the larynx were removed. As the disease was found to extend along the lower surface of the opposite side, the right vocal cord was also removed, except for the portion attached to the vocal process. As the condition of the thyroid cartilage itself was suspicious, a portion of it on each side of the commissure was clipped away. Owing to the extensiveness of the operation the tracheotomy tube was left in for eighteen days. The patient was fed by the mouth at the end of twenty-four hours, and at the end of a week he was eating solid food. The microscope showed the disease to be an epithelioma. The patient is able to earn his own living. He has no stridor even in sleep, in spite of the very free removal of his vocal cords; he reports that he may be a little short-winded on exertion. He speaks easily and loudly with a strong, harsh voice, and this voice is apparently produced by the vibration of the aryepiglottic folds. The patient was shown before the Clinical Section of the Royal Society of Medicine on February 11th, 1910. He has now been four years and four months without any recurrence of the disease.

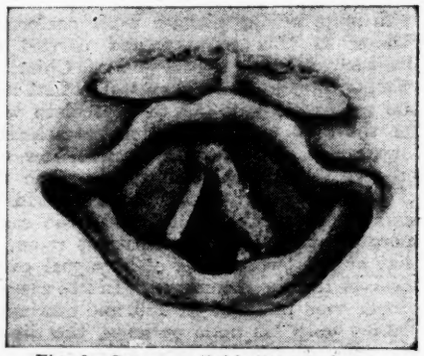


Fig. 8.—Case V. Epithelioma. Laryngo-fissure entirely under eudrenine. Growth found to extend to anterior two-thirds of right subglottic region. Both vocal cords completely removed and part of right ala.

CASE VI.

Mr. R. B. E., aged 59, was sent to me by Mr. R. C. Priestley in January, 1909. The patient had been hoarse continuously for three or four months, but voice had not been good for two or three years. On the middle third of the left vocal cord there was a papilloma-like, irregular, greyish growth, and the cords moved freely (Fig. 9). There were no enlarged glands. The growth was removed endolaryngeally and completely, and sent for examination to Dr. Eastes's laboratory. The report of Dr. Cuthbert Lockyer was that the microscope showed it to be a squamous-celled carcinoma, and this was confirmed by Mr. Shattock. Sir Henry Butlin examined both the growth and the patient, and strongly advised operation.

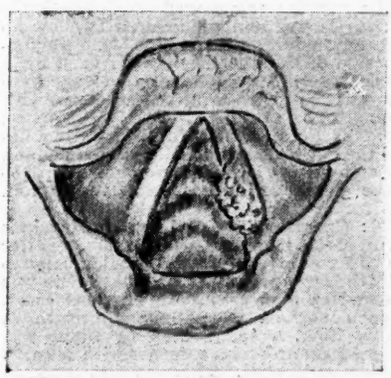


Fig. 9.—Case VI. Epithelioma of larynx.

February 17th, 1909: Operation, assisted by Messrs. Gilbert Smith, Irwin Moore, and E. Stabb, chloroform being given by Mr. Walter Tyrrell. Laryngo-fissure; no Hahn's tube was used. The left vocal cord with surrounding soft tissues was raised on its perichondrium from the inner surface of the thyroid cartilage and removed *en masse*. Tracheotomy tube was removed at the end of the operation. The microscopic examination of the removed portion confirmed the original diagnosis of epithelioma. The patient was fed by the mouth from the first day. Six weeks later an oval, pale, smooth growth about the size and shape of a small bean was removed from the anterior third of the newly-formed cicatricial left vocal cord. Under the microscope this was shown to consist of granulation tissue, with a tiny strip of degenerated epithelium which was quite benign.

The patient's voice is so satisfactory that he has been able to resume his profession of a schoolmaster. He smokes and is in good health. Three years have now elapsed without any trace of recurrence.

CASE VII.

Mr. J. S. P., aged 43. When this patient consulted me on February 13th, 1909, his voice had not been strong for a year. The right vocal cord was replaced by an irregular, slightly warty infiltration in its whole length, the posterior two-thirds being whitish. The cord moved, but not freely. There were no glands. The patient had a very hoarse, stenotic voice. He was also seen by Sir Henry Butlin, who wrote that "it ought to be much more widely cut out than in your preceding case. It is not a nice-looking growth, so I would go wide of it at each end."

February 25th, 1909: Laryngo-fissure, with the assistance of Messrs. Stabb, Moore, and Bedell Stanford. Chloroform was given by Mr. Walter Tyrrell. The entire right vocal cord and all the soft parts on the same side were raised on the perichondrium, and peeled off the inner surface of the thyroid cartilage. No Hahn's tube was employed, and no tracheotomy tube was left in. The microscopic examination of the removed growth showed it to be an epithelioma. The patient made a rapid recovery, and returned to playing lawn tennis and riding a bicycle. But towards the end of May (that is, within three months) stenosis and stridor slowly set in, with thickening over the anterior end of the right ventricular band. In June he was seen by Sir Henry Butlin, who advised waiting, in hope that the condition might be inflammatory or perichondrial.

In August we had a consultation with Dr. Lack, who advised waiting and watching, with complete excision of larynx if recurrence became decided. In September and October this advice was confirmed by Sir Henry Butlin, but by November, 1909, the stridor was so marked and suffocative attacks had become so alarming that tracheotomy was performed, and a week later, after a conference with Sir Henry Butlin, I removed the entire larynx with the first two rings of the trachea. The lower extremity of the trachea was attached to the front of the neck, and the opening into the pharynx was closed with catgut and the muscles sewn together over this, as it was my intention to cut off all communication between the mouth and the lungs. But these stitches broke down, leaving a gaping opening from the neck into the pharynx. The mucus and saliva which poured down into this space required careful plugging for many weeks as well as feeding with a nasal stomach tube. The result, however, was much more satisfactory than if the stitches in the pharynx had all held; for, as the wound slowly closed by granulation, the opportunity was taken of keeping open a track, by means of an inverted rubber tracheotomy tube, from the front of the neck up to behind the epiglottis. Into this track the upper lobster-tail portion of a von Bruns's artificial larynx was fitted, the lower segment of the instrument passing down into the orifice of the trachea, which had meantime become anchored to the front of the neck. When the orifice of this instrument in the front of the neck is corked up the patient is able comfortably to carry on respiration with air which has been filtered through his nose, and it also permits of his talking freely in a loud, strong whisper. When he requires more air—as in bicycling—he simply removes the cork from the von Bruns apparatus, and he then has an intake of air direct through the orifice in his neck in addition to what he inspires through his nose (Fig. 10).

The patient's feeling of well-being can be judged from the following extracts from some recent letters. He writes: "I think nothing of riding from 8 to 10 miles on my bicycle. I can bend down with the greatest ease, and this used rather to distress me. I never want to rest as formerly, and walk quite as fast as an ordinary man. I can lift quite heavy weights, always sleep well, have a good appetite and less constipation than formerly. I smoke 2 oz. of tobacco a week in a pipe—never anything else—and find it a great solace. I think I have noticed that my brain works with a clearer vision and I grasp facts more easily than hitherto; but perhaps this is through my being forced to speak as little as possible, and consequently I think and reason things out a good deal beforehand so as to save unnecessary talking. I am so well that I am anxious to get work to do, and some friends are trying to find me employment. I feel that by remaining idle I am wasting the powers which have been so mercifully restored to me."

I have quoted the patient's own description of his case at some length, as it shows a cheerfulness and vigour in marked contrast with the feeble and pitiable condition of many cases of laryngectomy in which all communication between the upper and lower air passages has been absolutely cut off.

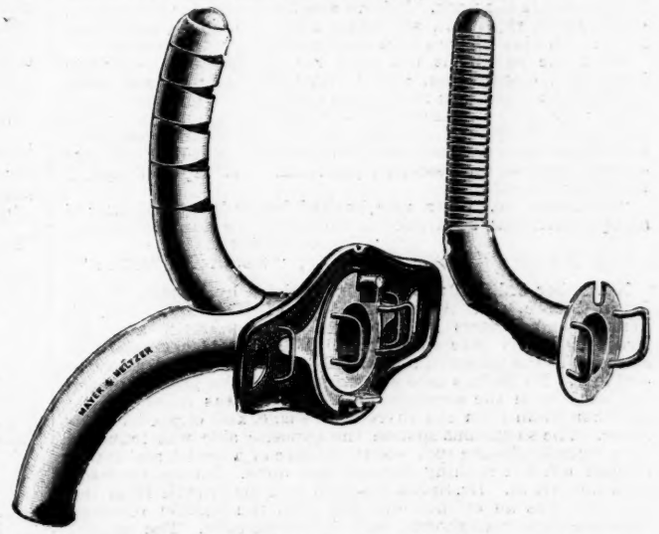


Fig. 10.—Modification of von Bruns's apparatus for cases where an opening is maintained into the pharynx.

It is now two years and two months since the entire larynx was removed, and the patient remains in excellent health and spirits and quite free from any recurrence of disease.

CASE VIII.

Mr. E. D., aged 58, December 21st, 1909. Referred to me by Sir Alfred Fripp and Dr. Greville MacDonald. He had been hoarse for about six months, and ten days previously to my seeing him a growth had been removed intralaryngeally by Dr. MacDonald from the right vocal cord and found microscopically to be an epithelioma. Both vocal cords moved freely, and the central part of the right cord showed an abraded granular surface. No glands. Chloroform was administered by Sir F. Hewitt, and with the assistance of Sir A. Fripp and Drs. Greville MacDonald and Irwin Moore, I performed a laryngo-fissure. Hahn's tube was not used. The soft tissues on the inner surface of the right thyroid cartilage were raised with the perichondrium, and the right cord was thus completely removed. The tracheotomy tube was not left in, but seven hours later it had to be inserted on account of some haemorrhage in the trachea. The tube was discontinued two days later. Within twenty-four hours of the operation the patient was sitting up and swallowing. Recovery was uneventful, except for some necrosis of the divided edges of the thyroid cartilage.

The microscopic examination of the removed vocal cord revealed an epithelioma.

The patient leads an active life and is in excellent health. His voice is fairly good. He has now passed more than two years without any suspicion of recurrence.

CASE IX.

Mr. F. S., aged 68, was brought to me on October 20th, 1910, by Mr. Leonard Avery with hoarseness of some three months' duration. The anterior four-fifths of the left vocal cord was replaced by a rough, almost cauliflower-like, infiltration, leaving

the processus vocalis free. The surface was whitish, and the base and the rest of the cord were deeply congested. At the corresponding part of the opposite cord there was a little whitish roughness (Fig. 11). Both cords moved freely. No enlarged glands. There was no history of lues and the Wassermann reaction was negative. To confirm the diagnosis of epithelioma I sent the patient to Sir Henry Butlin, and his letter in reply is so interesting that I quote it in extenso:

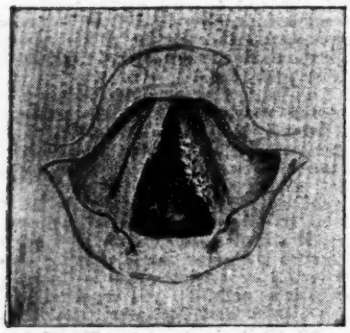


Fig. 11.—Case IX. Epithelioma of larynx.

"My dear Thomson,

"Even if there had been a positive reaction to Wassermann's test, I should regard the little growth in Mr. S.'s larynx as almost certainly malignant, on account of the whitish papillary projection from a red raised base, which looks like a collar around the whitish portion. The cord is red for some distance beyond the limits of the tumour. But it moves quite freely. There is a suspicion of something wrong on the margin of the other (the right cord), but I do not think it is yet a contact cancer.

"There is no widening of the larynx or enlarged gland that I could feel in the neck. It is an excellent case for thyrotomy. Cut the cord right out, and there ought not to be any recurrence. And just shave off the right cord if it is suspicious.

"But the patient is not good for an operation — chronic bronchitis, emphysema, and a very intermittent and slow pulse, and a bit slow in replying to questions. If he can stand lying with only an excuse for one flat pillow for four or five days after the operation, so that the liquids do not ooze down his air passages, you may pull him through. But if he has that oozing into his air passages, particularly of septic liquid, I think that he will die.

"However, I am quite sure he had better face the danger of an operation than be allowed to die slowly of a horrible disease.

"Yours very truly,

"HENRY T. BUTLIN."

November 3rd, 1910: Operation, assisted by Messrs. Avery, Irwin Moore, and A. J. Hutchison of Brighton. Drs. R. Wilson and Rogers of Montreal were present, and Sir Frederic Hewitt gave chloroform. The thyroid cartilage was so ossified—the patient's age was 68—that it required a saw to divide it. No Hahn's tube was employed. The growth on the left cord, with the surrounding soft parts, was raised on the perichondrium from the thyroid cartilage, and clipped out *en masse*. The suspicious spot on the opposite side was found to be a leucoplakia-like spot about the size of a lentil, and it was clipped off, but nothing further was done. No tracheotomy tube was left in. Dr. Spitta reported that the growth from the left cord was an epithelioma, but that the portion removed from the right cord showed only thickened cells. The patient swallowed liquids within twenty-four hours, and was out of bed and eating solid food within forty-eight hours. There was no bronchial or pulmonary trouble traceable to the operation, but later on, in very foggy November weather, he developed considerable emphysema and bronchitis, with a temperature of 101°. In spite of this he made a good recovery.

He has gained 1 st. in weight, has resumed smoking, and speaks freely in a strong rough voice.

He has now been one year and three months without any suspicion of recurrence.

CASE X.

Mr. I. M. R., aged 55, a merchant in Calcutta, was brought to me by Sir Havelock Charles on November 10th, 1910. He gave a history of intermittent huskiness for nearly two years and of persistent hoarseness for seven months. When in India in September a portion of a growth was removed *per vias naturales* from the right side of his larynx and pronounced to show no positive sign of malignancy under the microscope. On examination I found the right side of the endolarynx was fixed by a rough infiltration, replacing the cord and some of the ventricular band; there was no distinct fungation nor whitish sprouts about it, and no glands in the neck. The Wassermann reaction was negative. Sir Felix Semon, in consultation, unhesitatingly confirmed the clinical diagnosis of malignancy and advised immediate laryngo-fissure, but with reserve in regard to possible extension to the glands beside and below the thyroid cartilage.

November 18th, 1910: Operation, assisted by Sir Havelock Charles and Dr. Irwin Moore; chloroform by Mr. Walter Tyrrell. The growth did not invade the ventricular band to the extent suggested by the laryngeal mirror. The growth was undermined and removed *en bloc*, as in the previous cases. Microscopic examination showed a malignant growth of squamous type. In addition, a small mass of tissue was removed from the anterior commissure, together with a small anterior portion of the left vocal cord. This was also reported to show a malignant growth. Finally, as there was a suspicious appearance of the posterior part of the right side, the vocal process with part of the arytenoid was removed. On this the pathologist's report was: "There is no malignant invasion of the arytenoid tissue. The glands are degenerated and inflamed. The surface epithelioma is intact, but beneath it there is a zone of round-celled infiltration."

The patient was sitting up and eating solids within forty-eight hours. He returned to India a month later.

These 10 cases can be summarized in the following table, which I have arranged so as to be readily referred to for certain points which appear to me to call for consideration and discussion (see table at foot of page).

The duration of the cure in each case from the date of operation to February, 1912, has been as follows:

	Cases.
7½ years	1
4 years and 4 months	1
3 years	1
2 years and 2 months since laryngectomy ...	1
2 years and 1 month	1
1 year and 3 months	2
Died from other cause 15 months after operation	1
Died from cancer of tongue on opposite side 3 years after operation, and without local recurrence	1
Died from local recurrence	1
	10

CONCLUSIONS.

The conclusions to be drawn from this record can be stated briefly as follows:

All the patients were male.

Their ages varied between 43 and 68. Five, or 50 per cent., were under 50. Four were between 50 and 60. One was nearly 70.

	Sex and Age.	Duration of Huskiness.	Kept under Observation.	Enlarged Glands.	Movement of Vocal Cord.	Preliminary Microscopic Examination.	Hahn's Tube.	Pathological Report.	Recurrence.
Case I ...	M., 47	3 months	4 months	None	Good	Not made	Used	Epithelioma	None locally. Death from cancer of opposite side of tongue 3 years later.
Case II ...	M., 49	2 years	—	Small gland on crico-thyroid membrane	Abolished	Not made	Used	Carcinoma	None at end of 15 months. Death from other causes.
Case III ...	M., 48	13 months	9 months	Slight on opposite side	Slightly impaired	Not made	Used	Epithelioma	None after 7½ years.
Case IV ...	M., 49	6 months	1 month	None	Slightly impaired	Not made	Used	Epithelioma	Recurrence in 8 months. Death.
Case V ...	M., 54	1 year	—	None	Abolished	Not made	Not used	Epithelioma	None after 4 years and 4 months.
Case VI ...	M., 59	3 months	—	None	Good	Positive	Not used	Epithelioma	None after 3 years.
Case VII ...	M., 43	1 year	—	None	Slightly impaired	Not made	Not used	Epithelioma	Recurrence in 9 months. Laryngectomy. No recurrence since in 2 years and 2 months.
Case VIII ...	M., 58	6 months	—	None	Good	Positive	Not used	Epithelioma	None after 2 years and 1 month.
Case IX ...	M., 68	3 months	—	None	Good	Not made	Not used	Epithelioma	None after 1 year and 3 months.
Case X ...	M., 55	7 months	—	None	Abolished	Negative	Not used	Epithelioma	None after 1 year and 3 months.

In no case did thyrotomy reveal any error of diagnosis.

The death-rate from the operation was nil.

Only one case is dead from local recurrence.

A second case died from separate development of cancer in another part of the body.

A third patient is dead from another cause.

Laryngo-fissure alone has yielded a lasting cure in 80 per cent. of cases.

Laryngo-fissure, supplemented by excision of the larynx in a case of local recurrence, has preserved 90 per cent. of the patients.

In the only two cases in which there was local recurrence the disease reappeared within the year following the operation of laryngo-fissure. This fully confirms Sir Felix Semon's conclusion that there is little or no anxiety as to return of intrinsic cancer if the larynx remains free for twelve months.[6] This conclusion is not invalidated by even such an interesting observation as that of Tilley where a patient had one vocal cord removed by laryngo-fissure for epithelioma; that side of the larynx remaining free for thirteen years, and the patient then dying from a cancer which developed on the opposite vocal cord.[7]

As regards the diagnosis, it will be noticed that huskiness, more or less persistent, was the principal subjective symptom. It had been present in periods varying from three months (Case IX) to two years (Case II) before the patients presented themselves. In the majority of cases the diagnosis was made at once from the clinical appearances alone. In one case the condition was kept under observation for one month, in another for four months, and in a third case for nine months, before other possible diseases were eliminated. This last mentioned case was actually hoarse for twenty-two months (Case III), and yet he has now been free of recurrence for seven and a half years.

In no case was there any decided enlargement of the cervical glands. In one case (Case III) there was a slight enlargement of one gland, but it was on the opposite side of the neck. In a second instance (Case II) the small gland always present in front of the crico-thyroid membrane was found slightly enlarged, but the microscope proved it to be free from epithelioma.

In three cases there was a preliminary microscopical examination of a removed portion of the neoplasm. The reasons why this is not done systematically in my practice are threefold: (*a*) In the majority of cases intrinsic laryngeal cancer presents itself as an infiltration of the cord, so that the removal of a satisfactory portion for examination is practically impossible. (*b*) An attempt at such a removal may hasten the extension of the disease, and it certainly so alters the local appearances that diagnosis by inspection becomes much more difficult. (*c*) The report on an unsatisfactory portion may be misleading, and so cause dangerous delay. This occurred in one of my cases (X); in the other two the microscopical report confirmed a suspicion, and justified me in proceeding with an operation which, otherwise, would have been undertaken with diffidence.

The microscopical report of the neoplasm removed at the operation in every instance confirmed the diagnosis of cancer.

The impaired mobility of the affected cord is, when present, a valuable symptom. The cord was quite fixed in two cases (V and X), and its movement was impaired in three other cases (III, IV, and VII). In two of these latter cases this failing mobility developed while under observation, and helped to confirm the diagnosis. Hence, in all, there was interference with movement of the cord in 50 per cent. of my cases, and I am thus able to confirm the value of a possible symptom to which Sir Felix Semon first directed attention.[8]

The technique of laryngo-fissure I do not propose to enter into this evening, but I would only refer to two points. I used Hahn's tube in the first four cases, but dispensed with it in the last six cases, and do not intend ever to employ it again. It is untrustworthy, risky, and unnecessary. The second point is the anaesthetic. One operation (VI) was performed under the local anaesthesia of eucaine. Although quite successful, the ordeal to both patient and surgeon is considerable, and I do not think that the mental strain to the former is counterbalanced by the gain. Several patients have declined it. The anaesthetic in the other cases was chloroform, and I am indebted in every instance to the skill of the anaesthetist who administered it. In such cases not only is an expert necessary, but there is probably no other operation in surgery where particular training and experience is so necessary. For future cases I shall look forward to the advantages of the intravenous method of administration.

For the absence of error of diagnosis in any case, and for the avoidance of any mortality from the operation, we are indebted to the pioneers in this subject, and without any risk of being charged with Chauvinism I think we may claim that the greater share of the credit is due to Sir Felix Semon and our deeply-lamented friend Sir Henry Butlin. The diagnosis still remains a difficult subject. As Butlin pointed out seventeen years ago,[9] there are three classes of cases—the first in which any one can make a diagnosis; the second, in which only the better instructed and more experienced make it and others do not; and the third class, in which the conditions are so obscure that no one can make the diagnosis unless the larynx is opened, and in some cases it is even then difficult to make sure of the nature of the disease. A reference to the details of my ten cases will illustrate these points. In 50 per cent. of them the impaired mobility was a valuable sign. In 20 per cent. the microscope confirmed a suspicion. In 35 per cent. the gradual development of symptoms proved of value. I would call attention to this latter test, as it may be wiser to watch a case for some months—as happened in one of my successful cases (III)—rather than risk a failure. In all cases the sex and age of the patient, and the careful exclusion of other possibilities, are of paramount importance.

The convalescence in two cases was marked by an occurrence which often raises unnecessary alarm in the minds of laryngologists who may not have had experience of it, or who have not been warned of it by their studies of the subject. I refer to a small growth which sometimes makes its appearance in the anterior commissure or on to the new cicatricial vocal cord within a few months of the operation. This happened in Cases III and VI. Within three months a smooth, soft, pinkish, more or less pedunculated growth appeared. It was removed with laryngeal forceps, and was found to be a simple granuloma (Fig. 5).

The technique has been established by Semon and Butlin, and the improvements introduced by von Bruns, Chevalier Jackson, Moure, and others have been generally in the direction of simplification. I am glad that I have ventured to dispense with the Hahn's tube, and I am well satisfied with keeping the patient in a freely ventilated room and getting him out of bed as soon as possible, frequently within twenty-four hours. Preliminary treatment in the way of cutting off alcohol and tobacco, and purifying the mouth, are amongst small but important details.

In conclusion, I can but re-echo the fervent hope expressed in this room by Sir Felix Semon exactly five years ago—namely, that this evening's discussion may give a fresh impetus to early diagnosis, and immediate, thorough removal of the disease by thyrotomy in cases of intrinsic cancer of the larynx.[10]

I am much indebted to my friend Dr. P. Watson-Williams for most of the drawings which illustrate this article. They are made from my own rough sketches.

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THE thirteenth French Congress of Medicine will be held in Paris in October next (13th to 16th), under the presidency of Professor Chauffard. The following questions are proposed for discussion: Oxalaemia and oxaluria; acute infectious colitis; treatment of haemorrhagic syndromes. In addition to these the following are suggested: Anaphylactic states in their clinical aspects; antityphoid vaccination. The General Secretary is Professor P. Teissier, 142 *bis*, rue de Grenelle, Paris.

A PECULIAR CASE OF OESOPHAGEAL DILATATION.

BY PEVERELL S. HICHENS, M.A., M.D.OXON., F.R.C.P.LOND.,
HONORARY PHYSICIAN, NORTHAMPTON GENERAL HOSPITAL.

THE following very remarkable case of oesophageal dilatation in an achondroplasic dwarf seems to be worthy of a full report.

H. G. first came under my notice on July 26th, 1905, at the age of 33. He presented the typical appearances of achondroplasia, but it is not necessary to enlarge upon them, as it is not with reference to this disease that the case is reported.

First Residence in Hospital.

His occupation was that of a tailor, and he had enjoyed very fair health all his life till the last two or three years, when he began to have symptoms off and on of difficulty in digesting his food. He complained of pain after food, and of frequently vomiting his food almost immediately it had been taken. There was no history of vomiting blood or of melaena. The stomach showed no appearance of dilatation downwards, but came up in the axilla to the third rib.

The patient vomited nearly every day at first; the food appeared to return undigested, and did not smell of the gastric juice, but the vomit was acid. An oesophageal bougie was arrested 17 in. from the teeth, and on attempting to wash out the stomach with a stomach tube, the tube was arrested at the same distance from the teeth and the fluid came back

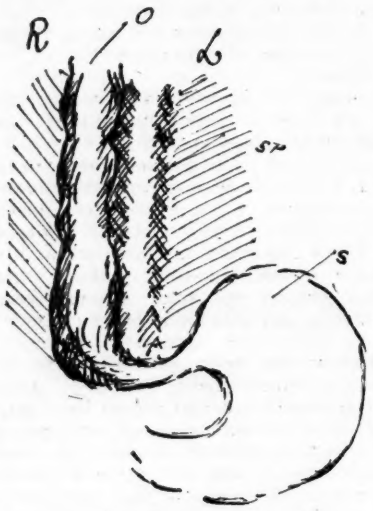


Fig. 1.—Diagram of *post-mortem* appearance of stomach and oesophagus. O, Oesophagus; SP, spine; S, stomach.

immediately, quite clear and not at all acid. Mapping out the stomach with carbonic acid gas showed only slight dilatation.

The diagnosis seemed to be stricture of the oesophagus at the cardiac orifice with subsequent dilatation. The cause of the stricture was, however, very doubtful; the age of the patient and duration of the symptoms was rather against malignancy, and there was no history of ever having swallowed some corrosive. I came to the conclusion that there was possibly some congenital narrowing at the cardiac orifice, and called in my surgical colleague, Dr. R. A. Milligan, with the idea of asking him whether it would be possible to open the stomach and dilate the cardiac orifice from below. The alternative diagnosis was that the patient had a large oesophageal pouch. Dr. Milligan succeeded in passing a small bougie into the stomach, but a larger one doubled up above the stricture. His opinion was that it would be better not to operate.

With careful dieting the patient in the course of two months improved very considerably, and went out of the hospital in a fairly well-nourished condition, although he still vomited from time to time—about once in three to five days.

Second Residence in Hospital.

Nothing more was then heard of the patient till March 31st, 1909, when he reappeared at the hospital. He then reported that he had kept fairly well for some time, but that then his symptoms had gradually returned and that now he could keep nothing down at all. He complained of pain and fullness in the chest after meals, and that then shortly all the food was returned. He complained of great thirst and emaciation and that the bowels were very costive.

The stomach was not dilated, but came high up into the axilla, this time to the fourth rib; on both sides of the thoracic vertebrae behind from a little above the angles of the scapulae downwards there seemed to be a rather hyper-resonant note. All bougies, even the smallest, were arrested 17 in. from the teeth.

A bismuth meal was given and my colleague, Dr. W. M. Robson, kindly took an *x*-ray photograph of the thorax for me. The photograph when developed showed a marked shadow extending well to the right of the spine and reaching far up towards the clavicle. This seemed to point to the curious fact that the pouch or dilatation of the oesophagus was on the right side of the spine and not on the left. The food vomited was distinctly acid.

Under a course of purgatives and dietetic treatment as for a gastric ulcer, the patient made a complete recovery for the time being. He gained 13 lb., and left the hospital having not vomited for the last fifteen days. He was then able to take minced chicken, minced mutton, eggs, etc.

Third Residence in Hospital.

The patient made his appearance at the hospital for the last time on September 28th, 1909. He looked very emaciated, weak, and collapsed, and reported that his symptoms had recurred almost immediately after leaving the hospital in May, and that he had vomited nearly every day since that time.

On this occasion the stomach appeared to be distinctly dilated downwards nearly to the umbilicus.

No treatment was of any avail, and the patient rapidly sank and died, apparently from starvation, on October 20th, 1909.

Post-mortem Examination.

The oesophagus was to the right of the spine, greatly dilated and obscurely sacculated in its whole length. The muscular walls were greatly thickened and also the mucous membrane, which, however, was quite smooth and not congested. The walls of the oesophagus were considerably thicker than the walls of the stomach.

To gain the stomach the oesophagus crossed the spine at a

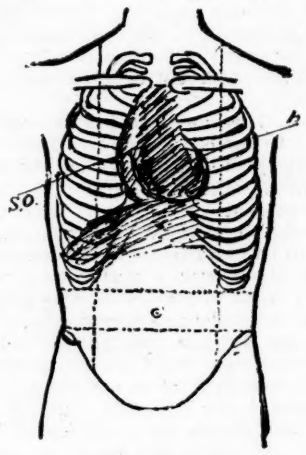


Fig. 2.—Diagram of *x* ray photograph after a bismuth meal. S.O, Shadow of dilated oesophagus; H, heart.

right angle, as in the accompanying sketch (Fig. 1). The mucous membrane of the oesophagus showed no sign of ulceration, new growth, or any stricture. The cardiac opening of the stomach admitted the middle finger of the hand. There was much débris of food in the oesophagus, very little in the stomach. Fluid poured into the oesophagus seemed to pass with difficulty into the stomach.

What was the origin of this curious condition seems to be doubtful. If the position of the oesophagus on the right side of the spine was a congenital anomaly, then probably the whole condition may be explained by the fact that the oesophagus had to cross the spine at a right angle to gain the stomach.

Food would tend to accumulate at the kink, and hence sagging and kinking would occur with the final result of a relatively complete obstruction.

The case might conceivably, however, have been one of the more ordinary cases of idiopathic dilatation of the oesophagus, due possibly either to cardiospasm or paralysis of the longitudinal muscle of the oesophagus. It is, perhaps, not impossible that under such circumstances the oesophagus should finally get displaced across the spine owing to the increasing weight of food within it. The mature age at which the patient died seems to be rather in favour of the second theory, as it seems unlikely that such a serious congenital malformation as the first theory would involve would have permitted the patient to reach adult life.

A CASE OF ANGIOMA OF THE ORO-PHARYNX.

BY

W. SANDERSON, M.B., CH.B.,

LIVERPOOL.

ANGIOMA is a disease not often found in the oro-pharynx. The first case of the kind recorded was by Wolfenden in the BRITISH MEDICAL JOURNAL, 1887, and the condition was described by him as being probably quite unique. In his case the growth involved the right half of the oro-pharynx and extended downwards to the level of the base of the tongue and upwards to a little above the level of the soft palate. A few cases of much smaller growth have been recorded since by McBride, Woods, Lichtwitz, and Laurens, but the greater portion of the tumour in these instances was located in adjacent parts—namely, the soft palate, faucial pillars, tonsils, and tongue.

The following case may therefore be of interest, not because of the symptoms or the treatment, which were practically *nil*, but on account of the rarity of the position of the growth, its extent, though localized to one particular area, and its appearances:

A spare, rather pale girl, aged 10, was brought by her mother on account of slight cough, which had been noticed off and on for about two years. A sister had been operated on some time previously for adenoids, and the mother thought that the cough in the present case might be due to the same cause. The expectoration had been on one or two occasions slightly tinged with blood. The patient herself felt quite well, had no discomfort or difficulty in swallowing, and breathed with the mouth closed. On inspection a diffuse bluish-red growth was seen involving the pharyngeal wall in its posterior and lateral aspects, extending on each side as far as the posterior faucial pillars. Posterior rhinoscopy showed that it ceased by a horizontal margin just above the level of the soft palate. There were no adenoids. The growth, though continuous, stood out in three vertical ridges, which became pillar-like if the patient gagged—one central on the posterior wall and one on each lateral wall. On tracing these downwards with the laryngoscope, the central ridge was seen to terminate in a rounded bulbous extremity, which frequently came in contact with the tip of the epiglottis; the lateral masses reached to the same level and presented the same appearance as the central one. There was no pulsation. The general tint was dark red, interspersed with bluish streaks; the surface was finely irregular, and the whole of the mucous membrane appeared to be involved. A minute area of the right posterior faucial pillar was also affected. The growth on palpation was firm but not hard.

This, then, is the history and description of the case, and one finds the latter to differ somewhat from that given in textbooks and recorded cases. In these the tumour is said to occur as a soft, purple, nodular growth of large varicose and tortuous veins, probably originating in Cruveilhier's plexus, and covered with intact mucous membrane.

In the case I have described there were no large vessels visible, and the mucous membrane itself was affected with the disease. Kyle, in his description of angioma of the upper air passages, states that the colour varies, depending upon the size of the tumour and its association with a vein, with an artery, or with both. If connected with an artery it is usually light red and pulsates; if with a vein the colour is darker, bluish-red, and pulsation is slight or absent; if with both artery and vein—and this is said to be the most frequent—it is dark red. From the clinical aspect one would place the above case in the veno-capillary group, and this was confirmed by microscopic examination of a portion removed by punch forceps from the right half of the growth.

A marked feature of naevi in the pharynx, and one which to a great extent influences the treatment of the condition, is the absence of symptoms. The majority of cases are accidentally discovered, and this may somewhat account for the fact that comparatively few cases have been recorded. Similar growths, on the other hand, occurring in the nose and larynx often bring the sufferers speedily for advice on account of obstruction in the nasal passages, epistaxis, muco-purulent discharge, interference with phonation, and respiratory troubles. Dr. Paul Laurens described a case in 1907 of angioma of the pharynx and velum palati that he had cured after fifteen sittings by monopolar electrolysis, but, where pharyngeal naevi and those in adjacent parts are large and cause little inconvenience, the general opinion at present is that it is better to leave them alone, and to instruct the patient to avoid food likely to abrade or tear the diseased part.

EARLY EXCISION OF BOILS.

BY

J. CROPPER, M.A., M.D.CANTAB.,

CHEPSTOW, MON.

THE results obtained by the method described below have been so encouraging during the last few years that I make no apology for publishing it.

A boil or furuncle may be described as a localized necrosis of the dermis resulting from intense inflammation due to staphylococcic infection. The efforts of Nature to throw the dead part off by ulceration—in other words, the separation of the slough—complete the process.

Since most, if not all, surgical operations are a frank imitation of natural processes, and are merely designed to accelerate these, it occurred to me that in the case of a boil, when once the inflammatory process was under way, all that one could do was to remove the central area of skin, which would sooner or later undergo necrosis, and thus forestall Nature, and that this would at once relieve stasis. The treatment by a crucial incision does not achieve this end in a satisfactory manner. I omit here any account of methods of treatment by pure carbolic acid or epilation, because I have rarely found them of any use beyond the first or second day. Afterwards there is a good deal of irritation and more drastic methods are needed. I tried the method first on myself on two occasions with most gratifying results. All pain was at once at an end and the scar was trifling.

An ethyl chloride spray, a sharp cataract (Graefe's) knife, and a pair of dissecting forceps are all that are required. The skin over and around the boil is well frozen. This renders it firm and easily cut, which is a great point. With the cataract knife held perpendicularly to the skin surface, a circular disc of the whole skin of the size of a wheat seed or small pea is removed by sawing movements. Where there is much inflammation the diameter of the piece removed may be ¼ in., but it need never be larger if tackled early. The pain caused by this procedure is really trifling, even when carried out on the tender inner part of the leg, and the bleeding is insignificant, and should be encouraged by warm bathing. The subsequent treatment by any form of antiseptic dressing seems to be of quite minor importance. It can be fixed by strapping. There is usually a little suppuration, but, from the moment of the operation, the throbbing and intense soreness are at an end.

I have personal experience of the relief to be obtained, and I find that somewhat hysterical girls will come back for treatment to be repeated, even on the face.

Not the least of the advantages is that the resulting scar, which is minute, is far less than the unsightly lumps so often left after ordinary treatment by poulticing, etc. Moreover, the danger of a secondary infection by the pus is reduced to a minimum. Where this method has been carried out properly complete success has resulted, and even where it has been badly done there has been considerable relief in all cases. The following are the words of one of my patients treated on the sixth day:

Before the operation I had a great deal of pain and throbbing so that I could hardly walk at all but had to lie down most of the time. The swelling of the leg became very painful on standing. I was somewhat apprehensive that the operation might be painful, but as a matter of fact I hardly felt the knife at all when the skin was frozen. As soon as it was over I experienced intense relief instantly, and suffered no more pain but only some slight soreness from the healing of the wound.

The deep purple congestion of the leg disappeared almost at once, and ten days later, after some suppuration, the wound was nearly closed.

AT the recent examination for sanitary inspectors under the Public Health (London) Act, 1891, held by the Sanitary Inspectors Examination Board, fourteen candidates were successful, of whom six were women. Two candidates were also successful in the examination for the special certificate for inspectors of meat and other foods held in conjunction with the above examination.

THE VALUE OF VITAL BLOOD STAINING IN THE STUDY OF THE SO-CALLED "INFECTIVE GRANULE."

BY

ANDREW BALFOUR, M.D., B.Sc., F.R.C.P., D.P.H.,

DIRECTOR WELLCOME TROPICAL RESEARCH LABORATORIES, GORDON COLLEGE, KHARTOUM.

[PRELIMINARY NOTE.]

IN the fourth report of these laboratories, and also elsewhere,[1] I have mentioned how valuable is the dark-field method of blood examination in studying the extrusion of living granules from spirochaetes and trypanosomes. By this method, combined with the better known laboratory processes, one has been able to discover a good deal regarding the part played by the infective granule in Sudan spirochaetosis, both in the blood and organs of the fowl and in the fluids and tissues of the ticks which serve as vectors of the disease. At the same time certain gaps in our knowledge remained to be bridged, and it was with the object of discovering, if possible, the missing links, that I decided to see if vital staining of the blood, a method commonly employed by German haematologists for studying the morphology of blood cells, would be of service.

After various trials it was found that toluidin blue was the best stain to employ and the most suitable strength proved to be one of 0.05 per cent. The solvent used is normal salt solution. I have no intention here of entering into details. The technique is of the simplest—the fresh blood and staining solution being mixed in a Wright's pipette and a drop of the mixture mounted as a sealed cover-slip preparation. I would merely say that this method, which during my enforced absence in Cairo has been carefully followed out by my laboratory assistant, Mr. Buchanan, appears to have solved many difficulties. It frequently shows up the granules in the living spirochaetes, it stains the free and living granules, it has apparently enabled the penetration of the red cell by the granule to be witnessed, and it has shown that not only are granules (spore forms) discharged from the mature intracorpuscular bodies, but that these bodies, unruptured and still containing the spores (merozoites), can be themselves set free from the red cells. Incidentally it has shown that they possess capsules or limiting membranes. Further, and of the greatest importance, it would seem to have permitted the demonstration of the development of the young spirochaete from the granule in the peripheral blood.

I say "seem," because it must be remembered that by thus staining the blood the latter is naturally placed under abnormal conditions, and also because such observations require to be repeated and confirmed. From what I have myself seen, however, I have little doubt of their accuracy, and I may say that Major Fry has also found the method most useful in studying the granules which are shed by trypanosomes. I hope to employ this vital staining in the case of fluids from infected ticks and of secretions from hard sores and syphilitic skin lesions.

So far as the blood is concerned, one great advantage of its use is that haemoconia remain unstained, and thus a very disturbing factor in dark-field work is easily eliminated.

I trust the publication of this preliminary note may induce any who are working at this granule problem to give the method of vital staining a trial, as it is important to collect all available evidence regarding a phenomenon which I believe to be of very great importance and significance. I think it might prove specially valuable in the study of what I have called "cryptic trypanosomiasis," a term which I see Dr. Bagshawe has adopted.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, November 11th, 1911.

THE late Mr. James Wilcock, J.P., of Blackburn, has by his will bequeathed £3,000 to the Imperial Cancer Research Fund (to which he had in his lifetime given £1,000), £2,000 each to the endowment funds of the Blackburn and East Lancashire Infirmary and the Blackburn and District Nursing Association, and £100 to the Pakhoi and Leper Medical Mission.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF ACTINOMYCOSIS OF THE LUNG.

THE recorded case of actinomycosis of the lung by Dr. F. Nicholson in the BRITISH MEDICAL JOURNAL of February 10th makes me think the following notes might be of interest.

The patient, an unmarried woman, 37 years of age, has been in poor health for three years, suffering from epilepsy. Previous to that time she was quite healthy. During all that period she had been on a specially restricted diet which she rigidly adhered to, and the foods which had been cut off were so numerous and so frequently on the table as ordinary articles of diet that I believe she was underfed. The family history is good. I saw her first on August 12th. She complained of pain in the left side on breathing, had a very slight rise of temperature (99° to 99.5°), some slight cough and dullness at the base of the left lung, but no expectoration; a small patch of crepitation was present. At the end of a week, after the subsidence of pain and temperature, I used von Pirquet's cutaneous tuberculin test without giving any reaction. She now left the district for a week or two, and during that time the cough got very bad, became spasmodic in character, accompanied with retching, much expectoration, night sweats, and great emaciation. On her return on September 6th I found the dullness increased, and many moist râles present over the base of the left lung; there were no rales in the apex of the left lung, or anywhere in the right lung.

The expectoration was very offensive and profuse, and I sent it to Dr. Claridge, of Norwich, for examination, expecting to hear it contained tubercle bacilli. He reported that the case was one of actinomycosis, the ray fungus being easily detected, and that no tubercle bacilli could be found. The expectoration was yellowish-green, containing small frayed, woolly-looking pieces. When spread on glass and looked at against a black background little yellowish specks could be picked out with a needle, and when placed on a slide and pressed down by the cover-glass showed the ray fungus very distinctly.

For fourteen days the temperature ranged from 100° in the morning to 101° and 102° in the evening, and the expectoration measured about 1 oz. daily. I gave a bad prognosis, but after three weeks of feeding up the patient began to improve, the cough disappeared, and the temperature became normal. When I examined her last (in November) the dullness was still apparent and the breath sounds feeble, but there were no râles. She is now able to be about in her usual not very robust health.

Cromer. ROBERT GRANT, M.D.

MELAENA NEONATORUM.

SOME cases of this comparatively rare disease have been reported during the past year or two in this JOURNAL. This is the more valuable, inasmuch as all the textbooks which I have consulted give only the slightest notice to the subject. The following case presents some noteworthy features.

The mother was a primipara, aged 38. The labour came on twenty-one days after the time when careful calculation led it to be expected. The first stage lasted about a week, and was controlled by all the means available. The delivery was accomplished with the aid of forceps, the patient being under chloroform for fully an hour, while gentle traction was employed to save the perineum. The child was a large female, born with slight wounds over the sides of the cranium where the forceps had gripped. On the day following birth I was called to see the child suffering from convulsions of a slight degree. These were put down to irritation from pressure by the forceps. To control the convulsions, I administered a little chloral and bromide by the rectum by means of a small india-rubber syringe. After the first injection I was surprised to see a little dark blood come away. Never having seen the condition before, I paid no attention to it. Some hours later I was called to see one of its cloths, containing three large clots of red blood. For two full

days blood was passed in large quantities from the rectum, painlessly and easily. The child became absolutely blanched. I administered adrenalin by the rectum, turpentine, and other haemostatics. I was just about to administer a saline infusion hypodermically when the bleeding stopped of its own accord, and the child is now doing well.

The outstanding features of the case all hinge round one point—the possibility of prolonged pressure on the child's body causing the haemorrhage. Thus, the mother was aged 38; the labour was three weeks overdue; the first stage lasted a week, and the actual transit of the child took over an hour. In addition, the child was very large, weighing 12 lb. In a recent number of the JOURNAL a writer emphasized the necessity of inducing labour whenever full term came on; and, in view of the above case, the suggestion is worth considering.

Shettleston, N.B. JAMES DUNLOP, M.B.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LONDON COUNTY ASYLUM, CANE HILL.

AN INTERESTING CASE OF STRANGULATED HERNIA UNDER EXCEPTIONAL CONDITIONS.

(By H. G. CRIBB, Senior Assistant Medical Officer.)

A. G., female, aged 49, was admitted to Cane Hill Asylum on October 15th, 1906, suffering from melancholia; she weighed 19 stone 2 lb. There were typical symptoms of chronic nephritis, and an irreducible ventral hernia measuring 12 in. by 7 in. During her residence in the asylum she has frequently been in bed, with markedly diminished daily quantity of urine (it varied between 21 and 58 oz. in the twenty-four hours), and oedema of legs.

On January 16th, 1912, the patient complained of abdominal pain, and was found to have developed a left inguinal hernia, which proved irreducible; frequent vomiting set in, and continued during twenty-four hours. In view of the renal condition and the ventral hernia, operation was postponed as long as possible; but the vomiting continuing and no relief being obtained from the use of enemata of various kinds, I decided to operate.

The skin was prepared by a preliminary wash, followed by two applications of iodine (tr. iodi 1 part, spirit 2 parts) to the operation area and surrounding skin. Owing to the patient's general state, I determined to try a local anaesthetic (Dr. Waite's preparation), which was freely injected into the skin, subcutaneous tissue, and then deeper. No pain was felt after the first puncture.

The usual operation was performed, but owing to the thickness of the abdominal wall and the tenseness of muscles, chloroform was found necessary before the hernia could be reduced, as there were numerous adhesions round the neck of the sac. The bowel was found to be very congested and black, but still shiny, and was considered to be in a fit state for replacement. The sac was ligatured, the ring sewn up with silk, the muscles sewn over, and the wound closed, a small gauze drain being inserted. The operation lasted forty minutes, and the patient's condition, considering her state before operation, was good. The wound healed by first intention, and recovery was uninterrupted.

The interesting points in this case were:

1. The facts that the patient was the subject of renal disease, had a large ventral hernia (both of old standing), and had lost some 5 st. 9 lb. during the last five years, naturally made one hesitate to operate.

2. The value of local anaesthesia in cases where a general anaesthetic is contraindicated cannot be overestimated.

3. The undoubted value of iodine and spirit to render the skin aseptic.

I am indebted to the Medical Superintendent for permission to publish this paper.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

Thursday, February 8th, 1912.

Professor MORRISON, President, in the Chair.

Rheumatoid Arthritis in a Child.

DR. WALTER JORDAN showed a boy, aged 8 years, with marked enlargement of all the interphalangeal joints of both hands and ganglionic swellings over the backs of the wrists. Extension of the fingers was limited, and of the wrists extremely so. The elbows were kept semiflexed, and showed very little range of movement, especially on the left, where supination was practically abolished. The shoulders seemed not to be affected. The knees were kept flexed and the hips slightly flexed, the left adducted also. A skiagram showed that there was no bony enlargement, but rarefaction of phalanges. There was no enlargement of the spleen; a small gland was to be felt in each axilla, and minute kernels in the groins. The patient was said to have been quite healthy until 2 years old, when a small swelling was noticed over the right wrist; later the feet and knees became affected. In spite of treatment at several hospitals the disease gradually progressed, the fingers becoming involved about sixteen months ago. Other children in the family were healthy; the father was said to have phthisis and the mother's mother to have been very rheumatic in her fingers in old age. Under treatment since April 24th, 1911, at the parish infirmary, the boy had had less pain and the swellings had slightly diminished, but fixation had increased in the elbows and remained about the same in the knees. Treatment had included a combination of continuous extension and passive movements, the correction of constipation, and the administration of sodii salicyl. and pot. bicarb., gr. xviii of the former drug being now taken five times a day. The substitution for a time of pot. iod. and liq. arsen. had been followed by a return of irregular pyrexia, which salicylate again controlled.

This was discussed by the PRESIDENT, Dr. EMANUEL, Dr. SAWYER, and Mr. NUTHALL. Dr. WALTER R. JORDAN replied.

Congenital Dislocation of Shoulders.

Mr. A. W. NUTHALL showed an infant, the subject of a condition called, for want of another term, congenital dislocation of the shoulders. The mother had first noticed the peculiar position of the arms when the child was 3 months old; it was not present at birth.

The arms, instead of hanging at the sides, were abducted and elevated, the elbows projecting slightly in front of the shoulders; the left elbow was on the level of ear, the right a little above the shoulder. The elbows were in the flexed position. The arms could be brought down to the sides, but only with difficulty and with evident discomfort to the child; when released they returned to their elevated position with an elastic recoil. The head of the humerus appeared to be in the normal situation, and a skiagram showed that the clavicle, scapula, and humerus were normal in their shape, development, and relative positions. Another deformity was present: talipes valgus of the left foot. The mother stated that the labour was not difficult, but that the cord was wound twice round the child's neck; she believed the presentation to have been a vertex one. The extension of the arms at the shoulders had produced deep creases across the deltoids.

It was suggested that the condition was of intrauterine origin, and analogous to the genu recurvatum produced by over-extension of the leg. The case was discussed by the PRESIDENT and Mr. GEORGE HEATON. Mr. NUTHALL replied.

Gumma of Trachea.

Dr. J. G. EMANUEL showed a case:

A married woman, aged 38, was first seen on August 15th, 1911, and found to be in a very distressed condition, in imminent danger of suffocation and threatened with starvation. She was sitting propped up in bed, cyanosed, and breathing with great difficulty—each inspiratory effort being accompanied by loud stridor. She had a troublesome and ineffectual cough, which caused great pain on the larynx. For seven weeks she had been unable to swallow anything but fluids, and during the last week swallowing had become so painful that even fluids were rejected, and she had subsisted on nutrient enemata. The last

two days even these latter were not retained. Examination of the chest and larynx revealed no cause for the stridor, and consequently some obstruction was diagnosed. The patient had enjoyed good health until three months previously, when she was suddenly seized one day at work with an attack of respiratory difficulty, resembling, according to her description, an attack of severe asthma. From that day the breathing had been laboured and had steadily grown worse; a cough which caused her much pain in the throat and stridor added to her discomfort. She had lost much flesh and sleep had become impossible. By applying to the pharynx a 10 per cent. solution of cocaine swallowing was made possible, and a drachm of blue ointment was rubbed into the skin every night. Her breathing began to improve, and a week later (August 22nd) she was seized with a fit of coughing that threatened to choke her, but terminated in the ejection of a necrotic mass, the size of a marble, which had embedded in it fragments of three rings of tracheal cartilage. With the ejection of this mass her breathing at once became easy and the stridor disappeared. Ten days later she left the hospital looking and feeling quite well. She reported herself as an out-patient every week and took regularly pot. iod. gr. 10, liq. hydrarg. perchlor. ℥ss ter die. In spite of this five weeks later her symptoms suddenly reappeared, commencing, as on the first occasion, with a sudden asthmatic-like attack. She was forthwith readmitted. It was thought that she had been neglecting to take her medicine, so the same mixture was given, but with an increased dose of the perchloride, namely, pot. iod. gr. 10, liq. hydrarg. perchlor, ℥j ter die. The patient made no improvement for six days, however, but developed a gumma on the sole of one foot. Recourse was then had to inunction of blue ointment, with the result that all symptoms rapidly subsided, and she left the hospital in a week's time quite well.

Dr. Emanuel drew attention to the important part played by mercury in what was clearly a case of tertiary syphilis and to the advantage of inunction over oral administration.

Enlarged Prostate.

Mr. GEORGE HEATON showed three specimens and read clinical notes of the cases.

1. Enlarged prostate and calculus removed by suprapubic cystotomy and prostatectomy in a gentleman aged 60. He had been under treatment for prostate enlargement for a year, and had been repeatedly examined by various medical men. He occasionally passed a little blood. The frequency of micturition was greater than could be accounted for by his prostate enlargement. The residual urine was 4 oz. He was very intolerant of catheterization. Cystoscopy under an anaesthetic showed a small calculus in post-prostatic pouch. Suprapubic cystotomy and prostatectomy was performed. He had several small pulmonary embolic attacks during convalescence. Good recovery. Complete restoration of urination. Can hold his water four to five hours.

2. Enlarged prostate causing attacks of complete retention with haemorrhage, removed by suprapubic prostatectomy. Patient aged 55. Had lost a brother some years ago from prostate enlargement. He had several attacks of complete retention relieved by catheter. Bladder opened in November last for complete retention. The prostate was found very much enlarged. Fourteen days afterwards the prostate was removed through suprapubic fistula. Slow convalescence. He has now completely regained power of micturition, which is easy and painless. He passed two small phosphatic concretions during his recovery.

3. Enlarged prostate removed by suprapubic prostatectomy from a gentleman aged 53. A very nervous patient who, though warned by his medical attendant that his prostate was the cause of his symptoms, declined operation for many months. Latterly had been fast losing flesh and becoming anaemic. His bladder was in a state of perpetual over-distension. Micturition was very frequent day and night. The bladder contained 3 pints of urine after the end of voluntary micturition, very light coloured, specific gravity 1003, and contained a faint trace of albumen. The risks of the operation in his case were put before him, and he assented to the operation. Suprapubic prostatectomy was performed. A pedunculated middle lobe completely blocked up the internal orifice of the urethra. The bladder itself was greatly distended, its walls thinned and fasciculated. The bladder and operation wound gave no further trouble, but he never seemed to pick up after the operation. He became more anaemic and developed acute cardiac dilatation, from which he died ten days after the operation. No *post-mortem* examination was made, but he had doubtless dilatation of his uterer and kidney pelvis with chronic interstitial nephritis, the result of the long-continued back pressure on the organs.

Uterine Haemorrhage.

Mr. BECKWITH WHITEHOUSE read a paper on some notes on uterine haemorrhage, with special reference to the abuse of the curette. This was discussed by Dr. PURSLOW, Mr. J. FURNEAUX JORDAN, Dr. OAKES, Dr. HEATON WHITE, and Dr. THOS. WILSON. Mr. BECKWITH WHITEHOUSE replied.

NORTH OF ENGLAND BRANCH: NEWCASTLE-ON-TYNE DIVISION.

THE third monthly winter scientific demonstration of the Division was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on Friday, January 19th, when about 160 medical men were present.

Cerebral Tumours.

Dr. DRUMMOND gave a demonstration on cerebral tumours. In introducing the subject he mentioned the typical signs and symptoms of the condition. He then demonstrated an exceptionally good series of clinical cases and specimens illustrative of the condition.

Tumours of the Larynx.

Mr. W. F. WILSON delivered an address on this subject, in which he said that persistent hoarseness in a child was indicative of a simple wart or papillomatous growth of the larynx, hoarseness *plus* dyspnoea being pathognomonic of such a condition. The history should be inquired into, so as to exclude syphilitic or diphtheritic membranous adhesions. Treatment should not be delayed in a child subject to attacks of dyspnoea, as the concomitant engorgement and congestion of the lungs and tubes might result in an eleventh-hour tracheotomy being followed by disastrous results. Tracheotomy should precede any operation for the removal of the growth, as it rendered such an operation free from unnecessary complications; then the growth should be removed by the direct method, using a Killian's tube or some modification of the same. Sedative steam inhalations (among which there was nothing better than the compound tincture of benzoin) in mild cases, and cold water sponging of the face and neck while the child was immersed in a bath of hot water, to cut short an urgent attack of dyspnoea or to avert threatened glottic spasm, would prove to be of use in many instances. "First stage intrinsic carcinoma of the larynx" did not come before the notice of the surgeon with anything like the lamentable proportionate frequency with which he saw the hopeless infected second stage of the disease. They knew that an epithelioma of the larynx might remain confined to the cords for more than two years. Yet the fact was there; they rarely had the opportunity of dealing with such a case, and as it was during that first stage only that they could offer the patient any hope of curing him, and remembering that eminent authorities like Butlin, Semon, Fraenkel and others had pronounced that he could be cured, it behoved them to plead for the more frequent use of the mirror in suspicious cases, and so to cultivate a closer familiarity with it, and to appreciate what early diagnosis means to the patient. Persistent hoarseness in a person of middle or older age should arouse suspicion, and the larynx should be carefully inspected with the mirror in every case. Epithelioma of the cord merged with the structure of the cord and seemed to "grow out" of it, whereas in a small fibroma or papilloma the growth appeared to "lie on" the surface in many instances as though it had been stuck there, and it did not affect the integrity of the cord like a malignant neoplasm; no matter what similarity or dissimilarity existed, a sufficiently large portion of the growth should be removed for microscopical examination, and the piece excised must be examined in vertical section to the plane of the cord from which it was taken, so as to avoid a mere shaving of the cord epithelium leading to mistakes. In inoperable cases the application of radium might be facilitated by using a suitable fenestrated tube under a general anaesthetic. Mr. Wilson had found that in the second stage cases, where tracheotomy had been necessary or not and where ulceration had not yet appeared, the latter complication might be markedly delayed, and life for that reason prolonged, by the administration of two or three minims of creosote in conjunction with five grains of the sodium benzoate in water three or four times a day. Antiseptic mouth-washes, especially after taking food, were likewise indicated.

Conservative Methods in the Treatment of Tuberculous Bone and Joint Disease.

Mr. H. J. GAUVAIN gave an address on this subject. Having alluded to the various views hitherto held as to the nature of tuberculous bone and joint disease and the effects of those views on treatment, he proceeded to deal at length with the present conception of the condition,

and from that argued that the disease was of the nature of a general infection with local manifestations, and that the logical treatment for such a condition would be one in which both general and local treatment should concurrently be undertaken. He then discussed those general methods of treatment which should be employed, and defined the requirements of a suitable country or marine hospital. The diet and drug treatment having been touched upon, the author proceeded to discuss those cases where radical measures might reasonably be undertaken. He alluded to a particular class of patients in whom the disease was of a very virulent type, and in whom unfavourable prognosis could early be given, and described how, by early recognition of these cases, treatment could be specially directed to procure a cure. The local treatment of tuberculous bone and joint disease was then discussed, with special reference to spinal caries. Splints suitable for immobilizing the spine and preventing or correcting deformity were described, and an exhibition was given of a cinematograph film illustrating the application of plaster-of-Paris in spinal caries. It was believed this was the first occasion on which the application of plaster-of-Paris had been demonstrated by this method. Lastly, the treatment of tuberculous abscesses and sinuses was considered. The value of aspiration combined with the employment of modifying fluids was dwelt upon, and the author showed that the process of healing after aspiration had been undertaken differed essentially from the process of healing of tuberculous abscesses which had been incised. The value of bismuth paste in the treatment of sinuses was discussed, and the author gave his views of those sinuses which were suitable for this method of treatment and those cases where not much success could be anticipated.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, February 12th, 1912.

DR. J. MITCHELL BRUCE, President, in the Chair.

Lord Lister and Sir W. Allchin.

BEFORE proceeding to the business of the meeting the PRESIDENT referred in sympathetic terms to the great loss which the society had sustained in the last few days by the death of their greatly respected Fellows, the late Lord Lister and Sir William Allchin. A vote of condolence with their nearest relatives was passed by the Fellows standing.

Intrinsic Cancer of the Larynx treated by Laryngo-fissure.

DR. STCLAIR THOMSON read a paper on this subject, which is published at p. 355.

SIR FELIX SEMON said that he was glad that Dr. StClair Thomson's experience bore out the points which he (Sir Felix) had emphasized in his paper five years ago. At one time the operation of laryngo-fissure had fallen into disrepute, and for ten years no one attempted it, but the late Sir Henry Butlin had restored it to its proper position. He thought that there was some improvement in recent years in the stage at which patients were sent by practitioners, but there was still room for further improvement, not only in England, but all the world over. After long-continued hoarseness, patients should be sent for efficient examination by a specialist. He thought many of the so-called recurrences were not really recurrences, scientifically speaking, because they did not occur either at the site of the original growth or in lymphatic connexion with it. Occasionally the second growth was of quite a different kind. He still held to the statement that if recurrence did not take place within one year the patient would probably remain free. He emphasized the importance of occlusion of the lower air passages during the operation.

DR. DE SANTI said that he had operated upon eight cases for intrinsic cancer of the larynx within twelve years. Seven were men. One was wrongly diagnosed as sarcoma, and proved to be a benign papillary growth. One had recurred fourteen months later in the glands. The longest period of immunity after the operation was eleven years. As the result of experimental injections to show the distribution of the lymphatics, he still held that the classification into extrinsic and intrinsic growths was the most satisfactory. All the seven cases recovered.

MR. E. B. WAGGETT said epithelioma of the larynx was a disease of extremely low malignancy, and consequently was especially suitable for operative treatment—facts which were imperfectly recognized by the profession generally. In order to obtain such cases early enough it should be insisted upon that all practitioners should be able to see the inside of a larynx during life before they passed their final examinations.

MR. HERBERT TILLEY recorded a case in which the operation had been successful for thirteen years. Then the patient died, and a hard button-like epithelioma was found *post mortem*. Another case illustrated the slight degree of malignancy, since symptoms were present for five years before the diagnosis was confirmed and operative treatment was deemed necessary. He did not think that bleeding after the operation was due to adrenalin having been used, but rather to the degenerate state of the arteries in elderly patients.

DR. WILLIAM HILL said that in his opinion primary extrinsic cancer of the larynx did not exist. He thought that the cases described that evening were not so much characteristic of intrinsic cancer of the larynx as of cancer of a small area of the larynx—"the vocal cord area." These were peculiarly operable. What he had called "party-walled" cancer was not so suitable for laryngo-fissure, as it soon spread and became extrinsic.

Aching Throat.

DR. KELSON pointed out that, although not serious to life, aching throat was important because very common, very depressing, and very persistent. The patients were mostly middle-aged, and might belong to either sex. They might show the various signs of chronic pharyngitis and other local pathological conditions, but these might be entirely absent and the throat appear normal. Anaemia, gout, or rheumatism might be present, but the treatment of these alone seldom cured the aching. Most commonly the patient suffered from flatulent dyspepsia with constipation. The nerve supply was described briefly, and shown to be exceedingly rich and varied; but, on the other hand, the sense of locality in the pharynx was very vague, and consequently pain was often referred to parts in this region other than those actually stimulated. Neurotic conditions and overuse of the voice would not explain the majority of cases of aching throat. A number of cases were then referred to, including two in which the cause had been salivary calculus. Since dyspepsia was by far the most common associate of aching throat, this must especially be treated. The assistance of a dentist was very often necessary, and the question of diet must be carefully considered. Cleansing washes and gargles might be used for the throat and nose, but operative treatment had better be avoided in the first instance. The aching might be due to toxins, or perhaps be a referred pain from the stomach.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Tuesday, February 13th, 1912.

MR. CLINTON DENT, President, in the Chair.

MEMBERS of the Sections of Medicine and Anaesthetics were also invited to attend.

The Death of Lord Lister.

The PRESIDENT, before the commencement of the ordinary business, paid an eloquent tribute to the memory of the late Lord Lister, O.M., who passed away last Saturday, full of years and full of honours, from a world whose pain and suffering he had done so much to alleviate. His scientific work was the heritage of the whole civilized world. The fewest words were the best when all words were empty, but the Section wished to express its profound sense of loss at the death of the most widely known and most universally revered member of the profession, whose contributions to medicine and the ancillary sciences had been so great. Whatever fabric future generations might erect, it would be built largely on the foundation that

Lord Lister had laid down. He proposed the following resolution:

> The Fellows of the Surgical Section of the Royal Society of Medicine desire to express the deep regret with which they learnt of Lord Lister's death, and to place on record their profound sense of the incalculable benefits that his life-work has conferred not less on other branches of medical science than on surgery and on humanity generally. They desire to convey to the members of his family their sympathy in this great loss—a loss that will be universally felt throughout the civilized world.

Sir ANTHONY A. BOWLBY, C.M.G., seconded, and specially emphasized the great results of Lister's work in the alleviation of the suffering which was formerly so acute immediately after operations, so that it might be described as torture. The resolution was carried by the entire meeting rising in silence.

Partial Thyroidectomy under Local Anaesthesia.

A discussion on partial thyroidectomy under local anaesthesia, with special reference to exophthalmic goitre, was opened by a contribution (read by Mr. DUNN, Honorary Secretary) by Dr. T. P. DUNHILL (Melbourne), who gave simply the results of his own experience, as there was room for legitimate difference of opinion on every aspect of the subject; they were still far from finality. The chief interest would centre around such questions as "Is surgical interference justifiable? If so, at what stage was it indicated? In the classical type there was goitre, tachycardia and palpitation, tremor, staring eyes, with or without exophthalmos. There might or might not be complete amenorrhoea, emaciation, alopecia, and other less constant symptoms. But there was little or no organic degeneration, and the heart had not yet "broken down." There was a possibility of a complete return to health by medical treatment or rest, or with no treatment at all. It was possible that, in spite of medical treatment, the disease might progress, to end either in death or in such organic degeneration that a return to health was impossible. In the second class he placed the cases in which the disease had progressed to the point of organic degeneration. In the third class were the cases in which the thyroid gland was quite small, and yet there might be one or more of the characteristic signs in extreme degree. The fourth class included cases in which were some thyrotoxic symptoms, associated with a goitre not truly exophthalmic in type. In deciding whether to operate in each class, one must take into account the position in life of the patient, and the severity of the case in relation to the progress made under medical treatment. If the patient had means and leisure and the symptoms were not progressing, and there seemed no danger of the heart passing from mere irritability to organic change, medical treatment could safely be persisted in for an indefinite time. He refused to operate until he knew that the patient had had three months' efficient medical treatment, unless there were other circumstances influencing the case. These cases responded promptly to operative treatment, and if organic disease was not present cure was complete, provided sufficient gland was removed. With local anaesthesia and expert operating the danger was *nil*. In the second class one met with every stage of wreck, with irregular pulse, and apex beat anywhere between the nipple line and the axilla. Most surgeons said these should not be touched, because (1) operation was too dangerous, (2) organic disease had advanced so far that improvement could not follow. Out of 380 thyroid operations he had done 19 in cases of this class. He did not think any anaesthetist would care to give a general anaesthetic to cases in this class, but under local anaesthesia the patients stood the operation well. There was only danger under two conditions: (1) Operating under an acute exacerbation of poisoning, (2) operating when bronchitis was present. He lost his first case through removing too much tissue at once with much crushing when he was inexpert. His second death was through operating when bronchitis was present, but the pulse-rate was daily increasing, and he took the risk to try and save life. Hypostatic pneumonia followed, and the patient died. The third case was moribund when he operated. He had lost one other case, the circumstances of which he was not at liberty to publish. Operation, in the author's opinion, should not be regarded only as a last resource; if it were, cases would be continually progressing from Class I to Class II. Five cases had been sent to him during the last eighteen months, which simply died as soon as they got into hospital. Operation was out of the question, and all had been under constant medical attention. Enough of the gland must be removed to cure the disease, and yet enough must be left for physiological purposes. In young patients and those not very bad, the larger lobe should be enough, with any mid-lobe or isthmus. In older people and those in whom the disease was very bad, the removal of one lobe would be of little use; one lobe and half the other must be taken away. Most of his operations had been performed under local anaesthesia. General anaesthesia alone was not the chief cause of death. He had placed the apparatus for general anaesthesia on a shelf in the room, and told the patient she might have it on demand, but he had never had to change. Local anaesthesia meant using 7 oz. of 2 per 1,000 novocaine, and well infiltrating all the front of the neck. If one lobe and a portion of the other were removed, the eye corresponding to the complete removal receded much more than the other. In 380 operations he had never seen evidence of tetany. He never did the intracapsular ligation of vessels. If removal were done rapidly and gently, removal of one lobe and a half was less dangerous than removal of one lobe alone.

Sir VICTOR HORSLEY said he could not hope to add much to what he said in the discussion at the Hunterian Society last year. But he would now take up certain points which Dr. Dunhill had raised and give his own experience. With regard to pathology, he did not quite agree with Dr. Dunhill's four classes. It was sufficient for their purpose to divide cases into true exophthalmic goitre with watery secretion, parenchymatous goitre with exophthalmic symptoms, and a third rare class in which the gland was wholly diseased, and in which he thought total removal ought to be carried out and then graft normal gland beneath the peritoneum. With reference to clinical experience and mortality, Dr. Dunhill said that in his experience the danger was *nil*, and that was his (Sir Victor's) own experience since he lost his first case sixteen years ago. He had not had another death; but in 3 cases he refused to operate, and so it might be said that he had avoided mortality. He thought the mortality-rate which had been published by physicians must depend upon an incorrect estimation of the condition of the patient before operating. With regard to methods of operating he did not see anything to call for special notice, except to say that he had discontinued doing ligature of arteries; it did not produce the effects brought about by removal of the lateral lobe and part of the isthmus. Concerning persistence of symptoms in successful cases—that is, those which could return to work—certain symptoms tended to persist: the hurrying of the heart on exertion and a degree of exophthalmos. He also had satisfied himself that his cases had had medical treatment for many months before he operated. Last year he operated upon a nurse who had had medical treatment for thirteen years. He thought, with Dr. Dunhill, that three months' medical treatment was enough. He did not believe there was any medical treatment which would cure a case of parenchymatous goitre with exophthalmic symptoms in the adult. But parenchymatous goitre in a young girl at the period of puberty could be got rid of by compensatory thyroid treatment. Classes I and II, which Dr. Dunhill mentioned, he would call parenchymatous goitre with exophthalmic symptoms, and which urgently called for operation. He was convinced that a certain number of cases of true exophthalmic goitre would get well with faradism and rest-cure treatment. If, after three months' medical treatment, the patient were not on the road to complete cure, surgery should be resorted to—namely, removal of the lateral lobe and isthmus. He had never operated on the condition with anything but general anaesthesia, and he had never seen any reason to depart from that. Still, he was convinced that the question of the anaesthetic had no influence on the prognosis in that operation. But he admitted that too often in general anaesthesia an excess of the anaesthetic was given; it should be given dosimetrically and in minimal quantity.

Dr. GEORGE MURRAY said the exciting cause of the proliferative changes in the thyroid gland in exophthalmic

goitre was not known. Sometimes there was atrophy of redundant epithelium and that might be secondary to a gradual fibrosis of the gland, which might proceed to destruction of glandular epithelium. General treatment, including mental and bodily rest, tended to diminish thyroidal activity. Excess of protein food should be avoided. Arsenic and belladonna probably tended to depress the activity of the secretory cells. The cytolytic serums tried did not seem to be specific in action, and might cause degenerative changes in other organs. The first three of his cases, in which one lobe of the thyroid gland was excised—in each case by a different surgeon—died immediately after the operation; two apparently died of heart failure within an hour of operation. Therefore for a long time he was reluctant to advise operation. Of 300 cases he had seen, only 10 had been operated upon, the mortality from the operation having been 30 per cent. It now seemed that operation could be recommended in a larger number of cases than previously appeared desirable. The prognosis given in most textbooks he regarded as too pessimistic; many cases recovered without operation.

Mr. LEEDHAM-GREEN (Birmingham) said that when the subject was discussed at the annual meeting in London, a very gloomy view was taken of the operation. But its value had not yet been sufficiently appreciated in England; indeed, many practitioners did not know that an operation could be done for its relief. He thought there was a distinct mortality from the operation, higher than that of simple goitre. Six leading German surgeons gave a mortality which varied from 3 per cent. to 17.3 per cent. In estimating whether the results warranted such a risk, one must compare it with the results of conservative treatment, but the data on which to base such an opinion were, as yet, few. The average for many hundreds of published cases was 15 per cent. Restoration to health also was strikingly good after operation. He had had only 30 cases, most of them during the last five years, and there were three deaths. But he had never refused to operate on a case. In this severe disease he did not take up the attitude that because there was extreme danger to the patient one must avoid operating. He had had some remarkably successful cases among patients who were dying, and had been refused operation, but were now able to work and earn their living. All the remainder, except the deaths he had referred to, had definite benefit from the operation. At the present time, in this country, the indication for operation was when all other treatment had failed; but if it was to be successful it must be resorted to before the nervous system was shattered by the prolonged ill effects of the disease. But he did not think every case of exophthalmic goitre should be operated upon. The modern tendency was to operate more radically than formerly; and his best results had been in cases in which he had removed the most. He regarded the anaesthetic as a matter of considerable importance; there was so little margin of safety that the operator could not afford to neglect the smallest point in the patient's favour. Unless the surgeon were accustomed to local anaesthesia, it was better to employ a general anaesthetic. He always gave his patients a preliminary dose of scopolamine and morphine.

Mr. LYNN THOMAS (Cardiff) said that since 1907 he had used novocaine 1 per cent., and after an experience with open ether *plus* oxygen he was of the same opinion as Sir Victor Horsley, that the anaesthetic was a very small factor in determining the success of the operation. He had had four deaths in connexion with the treatment of Graves's disease. He always had patients under observation for weeks, sometimes months, before operating upon them; and he did not operate unless the patient had absolute confidence in him. One of the cases died from emotional shock, one from pneumonia. In Wales most of the cases he had encountered came from near the sea; none from the mountain-top. Goitre cases which he operated upon were sent afterwards to the mountains.

Dr. HALE WHITE dealt with cases of exophthalmic goitre which came into Guy's Hospital between 1888 and 1907—twenty years; those (some of which could not be traced) with private patients totalled over 200. For first consideration he excluded those which had been operated upon, because his object was to discover what was the course of the patients who were not operated upon. That must be ascertained before it could be decided whether operation was useful or not. He traced 49 hospital patients, and 53 whom he had seen outside. An actuary had shown that, whereas the tables of twenty insurance offices gave the mortality for such ages of healthy persons as 5, the mortality among these cases not operated on was 8. Of 40 cases, 26 did well, 12 described themselves as having been moderately well or better, and 2 were not better. He gave descriptions of a number of cases in each class. He thought that in the future, when the operation had been made safe, the object of operating would not be to prevent the patient dying from the disease—for the disease did not kill many—but because it would get the patient well quicker and more perfectly than medical treatment got them well. But that could only be shown by a large number of cases, in which it would be known how completely they were cured; and it must be shown that after the operation patients were better able to do their work. Finally, the ultimate test must be actuarial; one must know what was the expectancy of life of a woman who had had part of her thyroid removed, and that could not be settled for some years, and only then on actuarial computation.

[The debate was adjourned to February 27th.]

CLINICAL SECTION.

Friday, February 9th, 1912.

Sir WILLIAM OSLER, President, in the Chair.

Diaphragmatic Hernia.

DR. WILFRED HARRIS and Mr. W. H. CLAYTON-GREENE communicated the notes of a case of this condition. The patient, a big, heavy woman, 5 ft. 10 in. in height, aged 31, during the last twelve months had been growing bigger, having increased 12 in. in girth in that time. She noticed, about a year before, pain in her left side at the level of the sixth rib. In March, 1911, she was assured that she was pregnant, and at that time her periods became scanty and shortened from their normal ten days to three days, but she remained regular every month throughout. In spite of this, pregnancy was insisted on, and she made all preparations, in December, 1911, getting a monthly nurse down from London. For months past she had difficulty in walking, owing to increasing pain in her left side; she could not sit properly, having to sit sideways on the front edge of a chair, on account of the pain in her side. She had been feeling increasingly short of breath, but was encouraged to go about and do everything. Five years ago she had a bad fall downstairs, and broke two ribs on the left side. Owing to the pregnancy not developing normally, Dr. Bott was called down to see her, and he found no evidence of pregnancy, but discovered dullness at the left base. He brought her at once up to London, and she vomited in the train, and again after arrival, since when her pain became worse, and she was said to have increased 2 in. in girth in the following week. Pelvic examination under an anaesthetic proved the uterus to be normal, and *x*-ray examination showed a sickle-shaped shadow at the left base, with a bright area above it, the diagnosis then being made of localized pneumothorax with a localized pleuritic effusion and partial collapse of lung. She complained of a great deal of pain and of hyperaesthesia of the skin on the left side. Dr. Harris saw her on December 29th, and found hyperresonance on percussing the left front, with diminished movement of the left apex and base, and with dullness in the left lower axilla and back, up to the eighth rib. There was weak air entry over the left upper back, with loud breath sounds over the whole of the right chest and heart sounds loudest to the right of the xiphi-sternum. No splash or coin sound. On auscultation, while the patient swallowed a little water loud sounds were heard at the back of the chest. Dr. Harris made a diagnosis of diaphragmatic hernia, assuming that the diaphragm might have been ruptured by the fall five years ago, and that a hernia of stomach and intestines into the left chest had gradually increased since a second blow on the side a year ago, causing collapse of the left lung and pushing the heart over to the right. He therefore declined to aspirate, and ordered 4 oz. of bismuth to be given with bread and milk, in view of another examination by skiascopy two hours later. This was done, and the bismuth shadow was clearly seen inside the chest. He therefore advised laparotomy, with a view

to possible reduction of the hernia. Mr. Clayton-Greene operated on January 1st, and on inserting his hand found numerous peritoneal adhesions and a total absence of the left half of the diaphragm and of the parietal pleura on the left side, it being possible to feel the ribs posteriorly practically up to the clavicle. The left lung was extremely small and the left thorax filled with stomach and intestines, the right half of the diaphragm being normal. The wound was at once sewn up and nothing further done. She had since made an uninterrupted recovery and was perfectly well, except for slight tenderness on the left side.

Exhibits.

The following cases were shown: Mr. F. J. Steward: Case of *Excision of epithelioma of lower end of pharynx.* Dr. Frederick Langmead: Case of *Anomalous oedema.* Dr. F. Parkes Weber: Case of *Diffuse symmetrical lipomatosis*, and a case of *Osteitis deformans with chronic eczema.* Mr. George F. Stebbing: Case of *Persistent nystagmus associated with periodical vomiting.* Dr. Hector Mackenzie and Mr. W. H. Battle: Case of *Hirschsprung's disease.* Dr. Herbert French: Case of *Tabes dorsalis* with one knee-jerk absent and the other brisk. Mr. W. H. Battle: Case of *Neuro-fibroma* of the supraorbital nerve in the orbit.

Laryngological Section.

Friday, February 2nd, 1912.

Dr. StClair Thomson, President, in the Chair.

Angioma of Nose.

Mr. Herbert Tilley showed a specimen and section of discrete angioma of nose which had been removed from a young man, aged 17, who applied to hospital for severe attacks of nose bleeding, which had rendered him very anaemic and weak.

Enlargement of Bridge of Nose by Nasal Polypi.

Mr. Herbert Tilley also showed a case of enlargement and distension of the bridge of the nose in a patient suffering from nasal polypi and pansinusitis. The upper regions of the septum were also thickened and considerable periostitis of the bones seemed to be present. The President, commenting on the appearances, remarked that in the cases he had seen, as in the present case, there had been no evidence of syphilis.

Ulcerated Growth of Larynx.

Mr. J. Everidge showed a case of ulcerated growth of the larynx with a negative Wassermann reaction. In the opinion of most of the members the disease was regarded as a tuberculous deposit.

Thyroid Tumour at Base of Tongue.

Mr. Charles A. Parker showed a case of thyroid tumour at the base of the tongue in a girl aged 16 years. The tumour was so large as to call for removal, but the apparent absence of any thyroid gland in the neck had led to hesitation in operating. The suggestions offered by members to avoid the difficulty were that the tumour might be dislocated from its buccal site to a position deeper in the tissues of the tongue, or that a partial excision only should be made.

Swelling in Tonsillar Region.

Dr. W. H. Kelson showed a swelling in the right tonsillar region in a woman, aged 24, with a hard mass at the angle of the jaw. The swelling also involved the lateral pharyngeal region above and behind the tonsil. The disease was generally regarded as inflammatory, possibly connected with a chronic suppuration of the ear from which the patient was suffering.

Paralysis of Soft Palate.

Dr. Andrew Wylie presented a case of paralysis of the soft palate, dating from a sore throat several weeks previously. Repeated bacteriological examinations had failed to disclose the presence of the Klebs-Loeffler bacillus, and several of the speakers referred to the elusive character of this organism as a fact which renders a negative finding of no value.

Skiagrams, Cases, etc.

Dr. William Hill exhibited a series of skiagrams illustrating (*a*) the palliative action of radium salts in malignant stricture of the gullet, and (*b*) the advantages of the *x*-rays screen for accurately applying a radium apparatus in the strictured area. Mr. Herbert Tilley and the exhibitor drew attention to the importance of the necessity for the nicest precision in introducing and leaving radium at the exact site in the oesophagus in cases of malignant stricture. Dr. James Donelan showed a singer, aged 44, with a *Growth on the anterior third of the right vocal cord*, which was regarded as a singer's node. Mr. Charles W. M. Hope exhibited a microscopical section of a malignant *Columnar-celled carcinoma of the oesophagus* from a man aged 25 years; attention was drawn to the occasional appearance of a columnar-celled cancer in a tube lined by squamous epithelium, and the mode of origin of such growths adverted to. Mr. Norman Patterson showed a case of *Abeyance of nasal breathing of hysterical origin*, the speech being markedly affected. Dr. E. A. Peters showed: (1) A case illustrating the formation of *Bilateral symmetrical perforations of the palate in a case of syphilis;* (2) A case of *Tumour of the right lateral wall of the pharynx* involving the right arytenoid in a woman, aged 27 years. The advisability of the early examination of such cases by the direct method in order to exclude post-cricoid carcinoma was remarked upon. A case of *Sublingual ulceration* of the floor of the mouth was exhibited by Dr. George C. Cathcart, and considered by certain of the members to be septic in origin. Mr. H. Seccombe Hett showed a series of 3 cases illustrating *Cysts of the larynx.* In one the cyst lay on the lingual aspect of the epiglottis; in the second on the vocal cord; while in the third a cyst, or cystic fibroma, was to be seen on the right arytenoid. Discussing the treatment of laryngeal cysts, several members expressed a preference for the galvano-cautery as compared with their removal by means of forceps. Dr. Dundas Grant exhibited a woman, the subject of tuberculosis, with an *Outgrowth from the lower pole of one tonsil.*

Section of Anaesthetics.

Friday, February 2nd, 1912.

Dr. McCardie, President, in the Chair.

Acetonuria in Children.

Dr. R. S. Frew, in a paper on the significance of acetonuria in children, showed that acetonuria was produced in the child by mere changes of diet; further, that the duration of the acetonuria was about three days, that it was more marked the younger the child, being 100 per cent. in babies changed from breast to artificial feeding, and 46 per cent. in children 11 and 12 years of age; the average of all children below 12 years of age being 61 per cent. He further pointed out that by giving dextrose this acetonuria could be made to disappear at any stage within twelve hours, and that the carbohydrate starvation necessary for its production was caused by the digestive instability of children. He drew attention to acetonuria being invariably produced by gross starvation in about twelve hours. It was maintained that both these conditions obtained in the preparation of the child for anaesthesia and that this was sufficient to account for the high percentage of acetonuria after anaesthesia recorded by various observers, which ranged from 63 per cent. to 89 per cent. This acetonuria could be prevented by the administration of dextrose up to and after the administration of the anaesthetic, thus avoiding what must be regarded as an additional risk.

After-effects of Chloroform.

A paper was read from Dr. A. L. M. Muskens, of Bergen of Zoom, Holland, describing the results of some experiments on rabbits made to investigate the after-effects of chloroform. Twenty-five rabbits were kept under chloroform one to two hours. Tables were shown illustrating the tissue changes in eight rabbits which died from the effects of the anaesthetic at periods of from twenty-two to one hundred hours, and in eight others which were killed at periods of three hours to five days after the administration. In the first group all the cases, except one in which chronic myocarditis was evidently the cause of death, showed advanced fatty degeneration of the liver amounting in most instances to complete central narcosis; in the rabbits in the second table (except in one animal killed immediately after the operation) fatty degeneration was also found, but to a somewhat less advanced degree than in the first group. Changes in the kidney and heart

tissues were much slighter and more variable. The writer considered that the liver degeneration was due to the chloroform, and was the cause of death in the fatal cases. He suggested that fat and oil should be avoided before an anaesthetic either in food or drugs, and that cholagogues might be useful afterwards in so far as they tend to remove fat as well as bile from the liver.

Mr. R. E. APPERLEY showed some microscopic specimens from livers of rabbits, and also of human subjects, illustrating the after-effects of chloroform. The rabbits had been kept under chloroform for half an hour daily for several days, and subsequently killed. In one of the human cases the patient had had two anaesthetics at a short interval—the first ether, the second chloroform; he died shortly after the second administration, of cerebral haemorrhage unconnected with the operation or anaesthetic. All the specimens showed fatty changes. Mr. Apperley pointed out that acetonuria occurred after anaesthesia in nearly all cases; after ether the amount was much greater, but fell to the minute trace which might be considered normal in one day; after chloroform the rise was less, being as 20 to 50, but persisted in a gradually diminishing degree for four days. This was doubtless to be explained by the fact that chloroform had much more effect upon the kidney than ether, and delayed excretion. In severe post-anaesthetic vomiting little acetonuria is generally present, when the vomiting stops the acetonuria increases.

Mr. A. L. FLEMMING agreed with the last speaker in regard to the respective effects of ether and chloroform upon the kidney. He stated that in 68 cases in which careful examination of the urine had been made, far more kidney cells were found after chloroform than after ether, and fatty changes were also present. Acetonuria frequently existed in cases where there was loss of fluid—for instance, vomiting; and he found that where a previous injection of saline had been given there was generally little acetonuria or unpleasant after-effects.

The PRESIDENT read notes of a case of chloroform toxaemia after an operation for cleft palate on a child of 2½ years. The operation was difficult and lasted one and a quarter hours; the anaesthetic was borne perfectly and but little blood was swallowed. At night the child was much collapsed and remained seriously ill for all next day, but gradually improved. The palatine flaps sloughed. The same child had had an operation when 12 months old, which was followed by prolonged vomiting. It was noteworthy that this child could not tolerate fat in any form. Cod-liver oil invariably upset him and starchy food had the same effect. He was subject to attacks of "liver-chill," accompanied by vomiting and diarrhoea. At a subsequent operation Dr. McCardie had administered ether for half an hour with no after-effects.

Dr. J. H. THURSFIELD referred to a series of post-anaesthetic deaths which had occurred at the Hospital for Sick Children, Great Ormond Street, in 1907, the causation of which was still under investigation. These deaths occurred under varying conditions, and were not to be explained either by the anaesthetic used, the methods of administration, or the preparation of the patient. He thought there was an additional factor still to be discovered. Acidosis occurs in all cases, and in a few passes into acid intoxication. Children operated on in the out-patient room, whether prepared or not, showed reaction next day in 100 per cent. of cases. Those operated on four or more days after admission were not found to react differently from those operated on immediately. He considered that dextrose had no effect whatever on acid intoxication. Sodium bicarbonate gave better results. He did not believe that the condition of the liver was causative or peculiar to the condition under discussion. The same changes were found in many diseases with quite different symptoms.

Dr. G. W. GOODHART did not agree that the liver changes found in acid intoxication were the same as those in other diseases. He thought that the clear differentiation of three zones was characteristic and not found in other conditions. He doubted whether there was any fatty degeneration of the kidney. This was difficult to prove, as fat occurs in quite healthy kidneys.

Mr. C. WAUGH objected to the name "post-anaesthetic poisoning." None of the cases referred to above had occurred among his cases, and he attributed this largely to his method of preparation. He had abolished purging and preliminary starvation, merely substituting the operation for a meal. He gave a large dose of soluble carbohydrate both immediately before and after the operation. He considered dextrose better than sodium bicarbonate, and instanced two cases where the patients' lives had apparently been saved by use of the latter.

Dr. SILK agreed with Mr. Waugh that the name should be dropped. Post-operative acetonuria depended on a complicated series of conditions.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, February 7th, 1912.

Mr. J. M. COTTERILL, President, in the Chair.

Renal Colic.

MR. C. W. CATHCART showed a woman, aged 44, who had suffered from renal colic for two years. The removal of a renal calculus did not relieve her symptoms, and on *x*-ray examination a stone was shown low down in the left ureter. The ureter having been exposed extraperitoneally, the stone was removed by a loop of copper wire mounted on a handle.

Fracture of Humerus followed by Paralysis of Movement.

Mr. CATHCART also showed a case of fracture of the humerus followed by paralysis of movement without impairment of sensation in the arm. On operation, the musculo-spiral was found caught in callus round the upper fragment, was relieved, while the fractured bone was wired. Steady recovery of movement since operation.

Myxoedema.

Dr. G. L. GULLAND showed a woman aged 44, presenting a typical picture of myxoedema, the symptoms having been present for three years. The right lobe of the thyroid was enlarged; there was also mitral stenosis.

Tabes Dorsalis.

Dr. GULLAND also showed a case of tabes dorsalis in a woman, aged 53. There was no history of syphilis, but of spinal disease seventeen years ago, which was treated by stretching. The Wassermann reaction was negative, and the cerebro-spinal fluid showed lymphocytosis. In addition to the classical symptoms of locomotor ataxia, there was partial paresis of both third nerves, and hemiatrophy of the tongue.

Entero-vesical Fistula.

Professor CAIRD showed a case of entero-vesical fistula in a man, aged 51, due to carcinoma of the sigmoid, involving the base of the bladder. The operation consisted of separation of the cancer from the bladder, enterectomy, closure of the bladder wound, and appendicostomy.

Treatment of Tuberculous Peritonitis in Adults by Operation.

Professor CAIRD read a paper on the treatment of tuberculous peritonitis in adults by operation. He dealt with a series of 31 cases, not including such conditions as tuberculosis of the appendix or caecum, or tuberculous ulceration of the small bowel. He believed that operation should be postponed until medical treatment had had a thorough trial. The clinical types were cases with free fluid, the dry forms with tubercles and adhesions, and mixed forms. The operation consisted in an incision from the umbilicus downwards, and opening of the peritoneal cavity. The benefit accruing from this in the cases of free fluid had been variously explained—by the entry of air, the relief of tension, the subsequent hyperaemia and exudation of fresh lymph more highly charged with bactericidal substances. The first explanation was probably incorrect, because the injection of air into the peritoneal cavity in these cases did no good. Contrary to general opinion, he had had best results from the dry forms with adhesions. In this group, such complications during operation as opening of the bowel and bladder were sometimes unavoidable, and also subsequent faecal fistula. In the mixed types some cases were closely imitated by cancer of the peritoneum with malignant ascites; and in these diagnosis could only be determined by microscopical examination.

Ortho-Roentgenography of the Heart and Aorta.

Dr. W. HOPE FOWLER and Dr. W. T. RITCHIE read a paper on this subject. After a brief history of ortho-

radiography a description was given of the Snoeck high-tension transformer and the Groedel orthodiagraph (a modification of Levy-Dorn's). The normal cardiac outline was then discussed. There were two curves on the right side and either three or four on the left. The variations of these curves in health, their form and pulsations, were indicated. The respiratory movements of the heart were more extensive than the pulsatile, and the form of the cardiac silhouette differed according to the phase of respiration at which the record was taken. The records were measured according to Groedel's method, measurements being also taken from the patient's right fist as standards, according to Levy-Dorn and Möller, for the size of the normal heart. Pathological conditions affecting the heart were more readily characterized by alteration of the cardiac silhouette than by variation in size alone. In well-marked cases of mitral incompetence the two lower curves on the left side were prominent. In mitral stenosis with the auricular musculature contracting in a co-ordinate manner the heart was rather vertical, the outline curves were sharply demarcated from each other, the left auricular and pulmonary curves were specially prominent, while that of the left ventricle might be diminished. Mitral stenosis with auricular fibrillation was characterized by a large globular heart, with bulging of the pulmonary and both auricular curves. In aortic incompetence the "recumbent egg form" was not constant, although the curve of the left ventricle was enlarged. Combined aortic and mitral incompetence presented a larger and more dilated heart. Illustrations were also shown of orthodiagraphic outlines from cases of mediastino-pericarditis, patent ventricular septum, patent ductus arteriosus, chronic interstitial nephritis, and aortic aneurysms. The orthodiagraphic and percussion outlines of various hearts were compared with one another, and it was shown that the left border of the heart and the upper limit of the liver, as ascertained by firm percussion, frequently lay too far to the left and too high respectively, while the right percussion border might be too near the mesial line. Owing to the oblique position of the heart within the thorax, the basal portions of the heart offered special difficulty to accurate delimitation by percussion. The position, size, and form of the heart could not be delimited so accurately by percussion as by the orthodiagraph.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

PATHOLOGICAL EVENING.

Friday, February 2nd, 1912.

Mr. W. MCADAM ECCLES, President, in the Chair.

The late Sir Henry Butlin.

AFTER the formal opening business of the meeting the PRESIDENT proposed that a vote of condolence be sent to Lady Butlin on her recent bereavement. As a society they felt that loss, for Sir Henry Butlin had been for many years a member with them, and they had recently elected him an honorary member.

"Dermoid Cysts" of Ovary.

The PRESIDENT showed a number of specimens of "so-called dermoid cysts" of the ovary, all exhibiting the presence of teeth. He discussed their probable origin, whether they were true teratoma, an epithelial inclusion, or a kind of unisexual development. He inclined to the first hypothesis.

Mr. ASLETT BALDWIN also showed a specimen of teeth from an ovarian dermoid, in which the number and perfection of the teeth was remarkable.

Mr. HOPEWELL SMITH, in commenting on the specimens, said that microscopic examination of these teeth usually showed that the hard tissues were malformed and the dentinal tubes irregular in arrangement.

Fractured Neck of Femur.

Mr. ASLETT BALDWIN showed, amongst other specimens, a radiograph of fractured neck of a femur with screw uniting the bone in position. The case was that of a man aged 40 years, who fell from a cart. The fracture caused 2 in. shortening. The shortening was reduced by an apparatus which permits screw traction on the limb, and when perfect length had been secured the steel screw, shown in the radiograph, had been driven through the trochanter into the neck and head of the bone. The whole was secured by a plaster mould.

Decidual Cast from Extrauterine Gestation.

Dr. WALTER FRY showed a decidual cast from a case of extrauterine gestation. A multipara, aged 26, missed one period. A fortnight later there was sudden violent pain about the left ovary. She was examined under chloroform, but nothing abnormal was found. A week later the cast was passed, and she recovered. Sections of the cast showed decidual cells of maternal origin, but none of fetal origin. Dr. Fry asked: If there was a conception, where was the fetus?

There was a discussion on this case, in which Dr. SIMSON, the PRESIDENT, and Dr. BERNSTEIN took part.

Fatal Visceral Disease.

Dr. JULIUS BERNSTEIN showed a number of specimens of recent cases of fatal visceral disease. Some of these led to valuable discussions. One was a specimen of acute infective endocarditis in a man aged 40, who had been seen by Dr. L. Dobson, who said the man's first medical attendant had considered the case one of cerebro-spinal meningitis; ten days later the doctor fell ill with the same symptoms. Dr. Reece of the Local Government Board inclined to the same diagnosis, but examination of fluid obtained by lumbar puncture in both cases proved that both were suffering from pneumococcic cerebro-spinal infection. The man died and the doctor recovered. He considered the endocarditis was a late secondary lesion, for there were no heart symptoms pointing to it.

Retroperitoneal Tumour.

There were shown (for Mr. BIDWELL) masses of soft fibroma or fibrolipoma which formed a retroperitoneal tumour; the symptoms pointed to the presence of a hydatid. The PRESIDENT said diagnosis of these cases was difficult, and occasionally the growth attained a huge size.

Membranous Rhinitis.

Dr. BERSTEIN showed a film preparation of pure Klebs-Loeffler bacillus taken from a case of membranous rhinitis. Dr. F. G. CROOKSHANK said these cases were not uncommon, although rarely recognized except by nose specialists. The symptoms and sequelae were not severe as a rule; he thought that was due to the absence of mixed infection.

Ulcerative Endocarditis.

Dr. A. C. FIRTH showed a specimen of ulcerative endocarditis due to general pneumococcal infection in a child aged 3. Examination of hospital reports for nine years only showed the occurrence of one other similar case at this early age.

Skiagrams.

Dr. REGINALD MORTON showed skiagrams of cases examined with other physicians. One, with Dr. PRITCHARD, was of a case of aneurysm of the arch of the aorta; the shadow of the aneurysm and the obstructed mass of a bismuth meal in the oesophagus could be seen. Other plates were of a case of gastroptosis, under the care of Dr. BERNSTEIN. The progress of the bismuth meal was shown in its various stages and the site of the delay noted.

Cancer of Uterus.

Dr. H. J. F. SIMSON showed cases illustrating the difficulties to be met with in the diagnosis of cancer of the uterus. There was a typical cauliflower growth of the cervix in which diagnosis was unmistakable; one of intracervical growth of most malignant character, but causing few symptoms; another of a uterus removed in a case of pyometra and grave symptoms simulating carcinoma of the body of the uterus, all of which were due to a fibroid in the posterior wall, causing obstruction.

Gastrectomy for Pyloric Ulcer.

Dr. E. A. SAUNDERS and Mr. L. BIDWELL showod a specimen of pyloric ulcer removed by partial gastrectomy with excellent results.

Disease of Nails.

Dr. ALFRED EDDOWES showed photographs illustrating diseased conditions of the nails: Psoriasis, overgrowth and deformity of the great toenails due to injury, and a rare condition of the nails of hands and feet that had been thought to be ringworm.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting held on February 8th, Mr. ROBERT JONES, President, in the chair, Dr. HILL ABRAM read a note on 2 cases of *Oedema of the orbit*: (1) A man, aged 30, who had swelling in the neck and in the right orbit, a naso-pharyngeal discharge of muco-pus, and, just before death, a violent epistaxis. A *post-mortem* examination showed necrosis of the pituitary body, with enlargement and oedema of the lymphatics of the right side of the neck; no growth was found, and the tissues were not further examined. (2) A robust man of 53. His illness began with pain in the right temple, swelling in the right eye, and a rise of temperature. The orbit was incised. At the autopsy there was exudation at the base of the brain, pus in the cavernous sinuses, thrombosed veins, and an actinomycotic mass in the orbit. Two difficult points to decide were—how the organism gained access to the body and what was the source of the infection. The mouth, teeth, and the intestinal canal, and even the skin, had been suggested as points of entry. The infection might come from domestic animals, or from foreign bodies, such as straw or splinters of wood. As the organism was found in carious teeth, it was possible that it led a saprophytic life. Dr. Abram suggested that further investigation was needed to decide whether the organism was anaërobic in man and aërobic in Nature. He could find no conclusive evidence of infection from man to man or from cattle to man. In the discussion that followed Dr. LLOYD ROBERTS mentioned a case of oedema of the orbit, with oedema of the rectum, in which an organism similar to the bacillus of diphtheria was found. The patient was given anti-diphtheritic serum, with the result that the swelling began to disappear in fifteen hours, and in a few days the patient was quite well. Mr. ADAIR DIGHTON referred to a case of actinomycotic meningitis following excision of the right eye for panophthalmitis after injury. In this case there was no oedema of the orbit. Dr. STALLYBRASS suggested milk as a vehicle of infection, as the disease had been found in the udder and the organism in milk. Dr. LLOYD ROBERTS opened a discussion on *Colitis* from the medical side. He reviewed our knowledge of the subject, and especially referred to Dr. Hale White's work, which began about twenty-four years ago. Dr. Roberts commented on the increase in frequency of the disease as well as of appendicitis since then. Mr. PAUL opened the discussion on the surgical side. He used two operations—appendicostomy for the milder cases and right lumbar colotomy for the more severe. A small incision gave access to the appendix, its base was anchored by fishing gut sutures, and a narrow rubber tube or pointed catheter was passed into the colon at the first operation. If left to a later stage, difficulty might be found owing to the shrinkage which took place in the appendix. Right lumbar colotomy was a difficult operation; opening the peritoneum did not much matter, but it was important not to injure the duodenum. He did not make as much of a spur in these cases as in other colotomies. He began systematic washing out of the bowel about two weeks after the operation, and did not find that antiseptics made much difference. In the discussion that followed, Dr. BRADSHAW claimed for castor oil in small doses an almost specific action in cases of colitis. Dr. WHITTAKER spoke of the treatment by electric enemata, by lactic acid cheese, and by enemata of allantoin. Mr. R. W. MURRAY said that in the first washout it was important not to use a larger quantity of fluid than half a pint, as large amounts sometimes caused collapse. Dr. MACALISTER spoke of the connexion between colitis and rheumatoid arthritis. Common paraffin had been found useful, as it formed a coating in which organisms could not live. He had found simaruba and pomegranate bark useful in these cases. Dr. C. L. WILLIAMS, Mr. NEWBOLT, Dr. COLIN CAMPBELL, Dr. MOORE A. ALEXANDER, and Dr. O. T. WILLIAMS took part in the discussion.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

AT a meeting held on February 2nd, Dr. FREELAND FERGUS, President, in the chair, Lieutenant-Colonel Sir WM. B. LEISHMAN delivered an address on *Antityphoid Inoculation*. After reviewing the history of the subject he referred to various methods of preparing antityphoid vaccine, and described that employed in the British army. The strain of typhoid bacilli used was one whose virulence had by long culture been greatly diminished. From subcultures of that strain, grown for thirty-six hours, and killed by exposure for an hour to a temperature of 53° C., the present vaccine was prepared. Careful tests were made to ensure the sterility of the vaccine before its issue for use, and no instance had occurred of sepsis attributable to it. Standardization of the vaccine was effected by counting the number of bacilli present along with a known quantity of normal blood whose plasma had been replaced by saline solution. The doses usually given were—an initial dose of 500 millions and, ten days later, a second dose of 1,000 millions of dead bacilli. If a single dose only could be given it was one of 1,000 millions. Experience in England and in India quite dispelled the idea that, owing to the development of a negative phase with increased susceptibility to infection, persons inoculated in presence of an epidemic of enteric fever ran more risk than the non-inoculated of contracting the disease. On the contrary, inoculation proved highly protective. As to the conditions under which antityphoid inoculation ought to be carried out as a prophylactic measure in civil life, all persons in attendance on cases of enteric fever and, on the occurrence of enteric in any large institution, all the inmates should be inoculated. In the army, even in time of peace, enteric fever was certain to be introduced, either by recruits (typhoid carriers or men incubating the disease) or from the surrounding population; and in time of war even the best sanitary organization was powerless to ensure protection from infection. All recent military experience showed the enormous incidence of invalidity and very high death-rate from this cause. The benefits resulting from antityphoid inoculation were strikingly shown by the statistics of enteric fever among British troops in India. For 17 years prior to 1907 the annual number of admissions had averaged 1,406, with an average of 353 deaths. In 1905 antityphoid inoculation was introduced as a voluntary measure, and while at first not largely utilized, was by 1907 being taken advantage of by the troops in increasing numbers. Since that date the admissions from enteric had fallen steadily, till in 1910 they numbered only 296, with 45 deaths. Recent experience with a large body of United States troops stationed on the Mexican frontier, among whom antityphoid inoculation was compulsory, proved the almost complete protection which this measure afforded the soldiers. Many observers had also found that antityphoid inoculation was of value not only in prophylaxis, but also as a therapeutic agent in cases of enteric fever, and the speaker believed that for this purpose a stock vaccine was more effective than an autogenous one.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

AT a clinical meeting held on February 8th, Mr. J. B. LAWFORD, President, in the chair, Mr. ROBERT DOYNE showed a case of *Guttate iritis*. He said he had never seen a case in a man. The guttae were independent, in position, of the inflammatory points. In the patient a week ago there were four well-marked spots, but now there was only one. It seemed to be an exudation between the layers of epithelium where it was reflected; usually the subjects of the condition were gouty. The PRESIDENT reminded the members of the cases shown by Mr. Doyne two years ago, and they seemed to have occurred only in cases of chronic iritis. If the condition happened in acute iritis it might be missed in the general haze. Mr. CHARLES WRAY showed (1) 3 cases of *Frontal sinus disease* with pathological specimens. (2) A severe case of *In-growing lashes treated by the electro-cautery*; he said that although Ziegler advocated that for entropion the cautery should be at a white heat, his own experience was that it was better at a dull red heat, and he preferred the thermo-cautery. (3) A *Cyclo-phorometer*, and described his method of testing. The case was discussed by Mr. WORTH, who referred to a book he published ten years ago on the subject. Mr. G. COATS exhibited a case of *Unilateral proliferation of the uveal pigment*, and Mr. TREACHER COLLINS one of *Unilateral melanosis of the uvea and sclera*, with elevations *on the affected eye*. Mr. COATS said there was evidence that the spot was there shortly after birth, and it had increased considerably in the last year. There was increased pig-

mentation of iris, fundus, and sclera. The point of most interest was the presence of elevations on the surface of the iris. Twenty-six cases of the kind had been recorded, and of these no fewer than 7 developed sarcomata in the eye late in life. The commonest age for it to occur was between 50 and 60, and the age of the youngest case recorded was 34. Mr. COLLINS said he had his case under observation and care for ten years. Not every case of melanosis showed elevations on the iris. Some years ago he showed at the society sections at the seat of melanosis, apparently dating from birth, in a man aged 60. He thought it was melanotic sarcoma of the ciliary body. He recently re-examined that section, and found it remarkably free from elevations. Mr. HEWKLEY raised the question whether it was the rule for the irides to be a light-grey colour at birth. Mr. LESLIE PATON showed a case of *Hole in the macula*, which he considered differed from ordinary cases of hole in the macula and from the fifteen cases collected in Mr. Ogilvie's paper, in the fact that the hole was blueish-white. There was no history of injury in the case, but there had evidently been considerable retinal disturbance all round the macular region. Apart from the hole, the general appearance was like that of albuminuric retinitis, but there was no trace of albumen in the urine, and no other organic disease. Mr. GREEVES showed again a patient with recurrent *Unpigmented tumour of the sclera*, the case having been brought forward originally in October last. Removal was done, and later there seemed to be a recurrence, but the scar tissue which began to form seemed to strangle the tumour, and it had now disappeared. The first tumour was pronounced to be a very cellular haemangioma. Mr. CUNNINGHAM showed two cases: (1) *Cholesterin crystals in the anterior chamber;* (2) *Retinal haemorrhage and exudation* in a young subject. The second case he regarded as one of vascular disease. The PRESIDENT, discussing Mr. Cunningham's second case, said he saw the lad in hospital, and no condition had been found which was likely to be causally related to the eye condition; nothing, for instance, in the blood-cell count, or the coagulation time, or the presence of any bacterial condition. The possibility of lead poisoning had also been excluded. Mr. DOYNE said he was convinced that the veins, not the arteries, were responsible for the haemorrhage. The whole eyeball might appear to be suddenly filled with blood. The cases which he had seen recovered, sometimes with very good vision, leaving some silvery stains in the retina, and sometimes some membrane in the vitreous. In one case he found that the blood tension was very low. Von Pirquet's reaction was positive. Mr. HARRISON BUTLER said Professor Axenfeldt had proved several of these diseases to be due to alterations in the retinal vessels, and he pointed out that nearly all the cases had a tuberculous basis. Mr. LESLIE PATON did not agree that these cases were analogous to cases of intravitreous haemorrhage. One case he saw had some cranial nerve palsy. Dr. FARQUHAR BUZZARD said he knew the case to which Mr. Paton alluded. It was not a case of true Bell's palsy, because only certain fibres of the facial nerve were affected. He thought it might have been due to a local haemorrhage in the facial nucleus or the facial nerve. One could easily imagine, following on Mr. Doyne's suggestion, that it might be caused by a small tuberculous deposit in the pons. Mr. CYRIL WALKER referred to the case of a man, aged 21, who was healthy but the sight of one eye was bad. He had many streaky-looking haemorrhages in the nerve fibre layer, and there were ten fairly large ones, the largest a quarter the size of the disc, and there were twenty smaller ones. In three weeks the sight improved a great deal. There was no macular star. Two months later the patient had a very large intraocular haemorrhage which blotted out everything. That remained opaque until two months later, when it began to get translucent. The treatment was mainly rest and the patient was also given some mercury. Mr. LAYTON DAVIES related the case of a male clerk, aged 19, who came complaining of severe headaches, and that a few days previously he was blind in his left eye. In the fundus striate haemorrhages were found over the retina, and dilatation of the vein, with white exudation, in the macular region. It looked like a case of albuminuric retinitis, but a physician found the urine normal. Mr. W. H. JESSOP considered such cases were somewhat allied to Raynaud's disease or even haemophilia; the subjects of it, when struck, rapidly became bruised. There seemed to be some defect in the coat of the arteries, leading readily to transudation. The discussion was continued by Mr. RAYNER BATTEN and the PRESIDENT. Mr. DAWNAY showed a case of persistence of anterior portion of hyaloid artery.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY.

THE fourth ordinary meeting of this society was held in the Royal Victoria Infirmary, Newcastle-on-Tyne, on February 8th, Dr. ANGUS MARTIN presiding. The evening was devoted to the demonstration and discussion of medical and surgical cases. Dr. ANGUS MARTIN showed a woman on whom he had performed *Removal of the uterus for chorion-epithelioma*, and in whom there was evidence of secondary lung involvement—bloody expectoration, etc. She was in excellent health, some months having elapsed since hysterectomy. The specimen was also shown. Dr. BEATTIE exhibited a case of *Acute chorea* in a boy of 18, accompanied by maniacal symptoms. He enlarged on the urgency of inducing sleep by heroic doses of hypnotics. The boy had mitral stenosis with regurgitation. Dr. PARKIN showed a case of *Cervical rib*, on either side the rib pressing on the lower trunk of the brachial plexus and producing nervous symptoms, neuralgia, paraesthesiae, etc. An operation had been performed on both sides, with cure on the right side and some relief on the left side. Dr. Parkin also brought forward a case of *Irregular first rib*, its anterior end being deficient and not coming up to its sternal articulation, but appearing to be attached to the upper surface of the second rib. The inner end of the clavicle was also malformed and less prominent than its fellow. The deformity was undoubtedly a rare one. Mr. ANGUS showed a man from whom he had removed a *Large sarcoma of the thigh*. The seat of disease was being treated with Coley's fluid, the dose having been increased to 10 minims. The patient was in good condition. Dr. BOLAM showed a case of *Carcinoma of the male breast*, which was receiving *x*-ray treatment, and exhibited a very marked degree of fibrosis and contraction. He also showed cases of *Naevus linearis and pemphigus*. Mr. RICHARDSON demonstrated a case after *Operation for ruptured gastric ulcer*, which was followed by pleural infection and empyema. It was of interest that on admission, four hours after rupture, pleural infection was suspected and constantly watched for. Mr. CLAY exhibited a case of *Apparent spontaneous cure of epithelioma of the penis* in a patient with undoubted syphilis. The microscopic report was only "suggested" epithelioma, and thus the disappearance of the lesion under iodide and mercury might be accounted for by its being a gumma of the penis. Mr. HAMILTON DRUMMOND showed a case of *Traumatic cerebral hernia* following compound fracture in the right temporal region. Spontaneous cure was looked for. Dr. HORSLEY DRUMMOND showed a case of *Cachectic infantilism*, the patient being 22 years old, and 4 ft. 6 in. in height. He had markedly enlarged liver and spleen and considerable dyspnoea. A positive Wassermann reaction had been obtained, while no evidence of pancreatic disease could be demonstrated. It was suggested to be of pituitary origin. A discussion followed the exhibition of the cases.

HARVEIAN SOCIETY OF LONDON.

A CLINICAL evening was held at Paddington Green Children's Hospital on February 1st, Dr. MACEVOY, the President, in the chair. The following cases were shown: Dr. GUTHRIE: (1) *Transposition of viscera and dextrocardia;* (2) *Right cerebellar tumour;* (3) *Chronic jaundice with splenomegaly.* Dr. SUTHERLAND: (1) *Achondroplasia;* (2) *Congenital heart disease;* (3) *Acute polioencephalitis;* (4) *Cardiac disease with rheumatic nodules;* (5) *Tuberculous peritonitis.* Dr. MILLER: (1) *Infantilism and chronic renal disease;* (2) *Acute poliomyelitis.* Mr. EDMUNDS: *Congenital absence of femur.* Mr. MAYOU: (1) *Sympathetic paralysis of right eye;* (2) *Congenital word-blindness.* The cases were discussed by various members. Some interesting microscopical slides were also shown in the new Pathological Department by Dr. PERKINS.

Reviews.

THE INSURANCE SCHEME.

THE volume with the title *National Insurance*,[1] by Messrs. A. S. COMYNS CARR and W. H. STUART GARNETT, barristers, and Dr. J. H. TAYLOR of Salford, to which brief reference was made last week, differs from most law books inasmuch as it contains an introduction, extending to over 100 pages, in which an attempt is made, and on the whole a very successful attempt, to describe simply and broadly the machinery of the Act, and to bring together in a connected form matters which can be gathered only after careful comparison of the various sections. In the second part the Act is set out in full and the several clauses are annotated in a manner familiar in law books. In the chapter on administration, as well as in that headed "Financial," much attention is turned to the financial question. It is pointed out that the Treasury is entrusted with a large control of the finances, partly directly and partly through the Insurance Commissioners, it being the duty of the latter, among other things, to fix the rates of contribution of voluntary contributors and to determine the expectation of sickness for the purpose of valuation tables. The financial chapter strikes us as particularly excellent, as it succeeds in dealing clearly with an exceedingly complicated subject with remarkable brevity. On the question of medical remuneration it may, however, be more convenient to quote the note to Clause 15 (Subclause 6), first setting out the terms of the subclause:

> 15 (6). There shall in each year be paid to the Insurance Committee for each county or county borough out of moneys credited to a society which has members resident in the county or county borough such sum in respect of the medical benefit of such members and the cost of administration thereof as may be agreed between the society and committee, or, in default of agreement, may be determined by the Insurance Commissioners.

The following are notes on this clause:

> "*Out of moneys credited to a society*"—i.e., under s. 54 (1) q.v. The society has no say in the matter, so that the medical profession has in effect a first charge on the insurance funds. Cf. s. 42 (*c*).
>
> "*Such sum as may be agreed.*"—When there is a local medical committee it must be consulted upon these agreements (s. 62).
>
> The Act nowhere defines the sum to be paid for medical benefit, nor the parts of such sum which are to be assigned to doctors and druggists. In framing the Act it was, however, assumed that 6s. per annum would suffice, having regard to the fact that 3s. 7½d. was the average rate for contract work under clubs and societies. The Government actuaries were accordingly instructed to prepare their estimates upon that basis, and accordingly assigned 1.51d. out of the contribution of 7d. for men and 6d. for women for the cost of medical benefit. (Parly. Paper, Cd. 5983 of 1911). It will be observed that this assessment of 1.51d. involves the assumption that on the average 48 weekly contributions will be paid in the year. Having estimated the cost of the other benefits, a margin of .42d. in the case of men, or 1s. 8d. in the year; and .53d. in the case of women, or 2s. 1½d. in the year, remains unallotted. But the contribution assigned for sickness benefit itself contains a margin of not less than 10 per cent. due to the withholding of benefit for the first three days and to the fact that the tables of expectation of sickness are derived from recent experience of the Manchester Unity of Oddfellows without allowance for the fact that the Manchester Unity experience includes industrial accidents, which do not rank for benefit under the Act. The whole of the margin expressly assigned in the actuarial tables ought therefore to be available either for additional benefits or for the cost of medical service; and it appears possible that 7s. for men and 7s. 6d. for women might be assigned for the cost of medical benefit without rendering the scheme insolvent.

In the introduction a similar opinion is expressed in almost identical terms. With regard to sanatorium benefit, we are inclined to think that the statement that an Insurance Committee has no specific authority to erect sanatoriums or other institutions is rather too absolute, having regard to the terms of the Finance Act, 1911, which sets apart one and a half million sterling "for the purposes of the provision of, or making grants in aid to, sanatoriums," etc. The chapter on the medical profession occupies some thirty pages, and for it no doubt Dr. Taylor is mainly responsible. He gives a sketch of the contract system of practice, and says truly that it was the recognition of the abuses of that system, and the desire to cope with them, which more than anything else led to the reorganization of the British Medical Association some ten years ago. The crude result of the inquiry then made by the Association was to show that the average fee now paid in medical clubs may be taken as about 4s. a year.

> But (Dr. Taylor continues) the universal opinion of medical men, supported by both the Majority and the Minority Reports of the Poor Law Commission, is that the present club rates are altogether inadequate. The rates were originally fixed on a charitable basis, and though perhaps the element of charity is no longer a deciding factor, and the rates remain low simply and solely through the keen competition in the profession, the clubs are generally only taken as a makeshift because they can be worked in the intervals of ordinary private practice; but if contract work is to be extended to one third of the population, considerably higher rates will be demanded.

He, however, goes on to say that

> It is useless to plead that the present members of clubs are picked lives, as that may continue to be the case in the approved societies.

Judging from recent decisions of some of the most important societies to dispense with medical examination on entry, this opinion would seem to require modification. He goes on as follows:

> But at present the friendly societies have a fairly low age limit for admission, while under the Act no approved society will be allowed to refuse applicants on the ground of age alone. This will raise the average age of the members for some years to come, and the sickness-rates increase so rapidly with age that, according to the Manchester Unity tables, the sickness-rate between the ages of 60 and 64 is four times as high as it is between 40 and 44, which of course means a corresponding increase of work for the doctor.

There are many other points which might be taken up both in this chapter and in other parts of the introduction, but we have said enough to show that the book has been carefully compiled. References and cross-references are freely given to facilitate a study of the Act and the formation of a judgement on the opinions expressed by the authors on various points. To the preface by Mr. Lloyd George reference was made in our last issue.

DISEASES OF THE THROAT, NOSE, AND EAR.

THE practitioner desirous of reorganizing his library with a view of finding room for works on diseases of the throat, nose, and ear would have no difficulty in filling up the gaps he might be able to make. Judging from the large number of works published on these subjects during the last two or three years, the difficulty would be in making a selection. Therein lies the task of the reviewer, who has briefly to indicate the scope of the various works to assist the practitioner in making a selection to meet his requirements. Commencing with a smaller work, the practitioner who does not read German, but is desirous of a brief but practical introduction to diseases of the nose and throat, will find himself indebted to Dr. BOWRING HORGAN for a translation of Dr. JOHANN FEIN'S work, entitled, *Hints for the General Practitioner in Rhinology and Laryngology*.[2] A limited but applicable knowledge of these subjects, as the author wisely states in the preface to his work, is of much greater importance for the general practitioner than an extensive knowledge which he is not able to apply properly. In that brief sentence is summed up the purport and contents of the little work. It is pre-eminently practical, with the result that we find the diseases classified according to the most striking symptoms which they present to the practitioner. Diseases which may be satisfactorily treated by the general practitioner are isolated and worked out in detail. On the other hand, those sections dealing with diseases that come almost entirely within the domain of the specialist are curtailed. We agree generally with the views expressed by the author, but exception must be taken, in the light of modern research, to the statement, "Tuberculosis of the larynx not uncommonly occurs as a primary affection." Doubtless this will be revised in a future edition, to which the work is fully entitled.

Another translation into English of a work published in the German language on *Diseases of the Nose, Mouth,*

[1] *National Insurance*. By A. S. Comyns Carr, W. H. Stuart Garnett, and J. H. Taylor, M.A., M.B., Ch.B. With a preface by the Right Hon. D. Lloyd George, M.P. London: Macmillan and Co., Ltd. 1912. (Med. 8vo, pp. 534. 6s. net.)

[2] *Hints for the General Practitioner in Rhinology and Laryngology*. By Dr. Johann Fein, Privatdocent, University of Vienna. Translated by J. Bowring Horgan, M.B., B.Ch. London: Rebman, Limited. 1910. (Cr. 8vo, pp. 236; 40 figs., 2 plates. 5s.)

Pharynx, and Larynx,[3] is that by ALFRED BRUCK, of Berlin. For the translation we are indebted to Dr. F. W. FORBES ROSS and Dr. FRIEDRICH GANS. The original German edition has already been noticed in these columns, so that it only remains for us to mention that the English edition closely follows the German text, and is quite readable even at the risk of not producing "classical English." The translators in their preface state that one of the most salient features of the original work is the prevailing absence of any unnecessary verbiage or "padding out." The introduction of editorial notes scattered through the English translation appears to be a work of supererogation.

Amongst the new editions we have pleasure in noticing one of Dr. LAMB'S little works; its scope has been enlarged; the outline sketch of diagnosis has been expanded, and sections of the treatment of diseases have been added. The title of the book has therefore been changed to *A Practical Guide to the Diseases of the Throat, Nose, and Ear*.[4] Dr. Lamb rightly maintains that the student who has learnt to use reflected light, and has studied the normal appearances and topography, will have little difficulty in making progress. There is no doubt the student must, above all, aim at the mastery of the methods of examination. The beginner does not require large material; it is, in fact, a serious disadvantage, as he is apt to acquire hasty and superficial methods of working. Dr. Lamb has furnished students desirous of obtaining a serviceable and practical knowledge of diseases of the ear, throat, and nose, with a safe elementary guide, telling them what they may expect to see, what the appearances indicate, and how the conditions should be treated.

Another clinical manual for the study of diseases of the throat which has reached its second edition is that by Dr. JAMES WALKER DOWNIE. This is a second edition in name only, for its predecessor has been remodelled[5]—it has been almost wholly rewritten and brought up to date. A considerable amount of new matter has been added as the natural result of the many important advances in the methods of diagnosis and treatment of diseases of the throat which have been made since the appearance of the first edition. The reader will find of service the subdivision of the subject-matter under a number of suitable headings to facilitate reference. The work is illustrated by several new and original drawings in black and white, and short notes of several cases which illustrate the course of a disease, the method of treatment and the ultimate result, have been introduced.

Dr. GLEASON'S *Manual of Diseases of the Nose, Throat, and Ear*[6] has also reached its second edition. The original character of the work is maintained. It is compactly printed, bound in a limp leather cover, which makes it quite portable and readily handled. The size has not been increased. Single sentences and paragraphs, amounting in all to about 60 pages, have been eliminated to make room for fresh matter. Amongst the new sections that have been added the following are to be noted: On membranous rhinitis, nasal mycosis, septal perforations, Ludwig's angina, Vincent's angina, leprosy of the nose, pharynx, and larynx, the blood in diseases of the upper respiratory tract, intracranial complications of otic disease and the climatology of diseases of the upper respiratory tract. A feature of the work is the formulary at the end of the volume. The local therapeutics of all drugs mentioned in the text are described, in some cases to the extent of a page or more. The first edition was noticed in these columns, and we have no hesitation in stating that no pains have been spared to make the second edition equally concise, practical, and up to date.

[3] *The Diseases of the Nose, Mouth, Pharynx, and Larynx.* By Dr. Alfred Bruck (Berlin). Edited and translated by F. W. Forbes Ross, M.D., assisted by Friedrich Gans, M.D. London: Rebman, Ltd. 1910. (Sup. roy. 8vo, pp. 639; figs. 217. 21s.)

[4] *Practical Guide to the Diseases of the Throat, Nose, and Ear.* By William Lamb, M.D., C.M.Edin., M.R.C.P.Lond. Second edition. London: Baillière, Tindall and Cox. 1909. (Cr. 8vo, pp. 338; illus. 55, plates 2. 7s. 6d.)

[5] *Clinical Manual for the Study of Diseases of the Throat.* By James Walker Downie, M.D., F.F.P.S.G. Second edition. Glasgow: James Maclehose and Sons. 1909. (Demy 8vo, pp. 450; illus. 88, plates xvii. 10s.)

[6] *A Manual of Diseases of the Nose, Throat, and Ear.* By E. P. Gleason, M.D., LL.D. Second edition. Philadelphia and London: W. B. Saunders Co. 1910. (Post 8vo, pp. 563. 12s.)

POPULAR DIETETICS.

ALTHOUGH MR. LEIPOLDT'S little book, *Common-sense Dietetics*,[7] is intended rather for the public than for the medical profession, yet it contains much that may be read with advantage by medical men. It is written more from the standpoint of the *bon vivant* than from that of the physician, or perhaps we should say it is intended as a guide to those who wish to enjoy the good things both in food and drink under regulation. The amount of scientific information is, perhaps, more than the public need, but sustains the author's attitude of the scientific expert. He takes up a very definite position against total abstainers from meat and alcohol. We believe he unduly disparages the positive evidence of the injurious effects of alcohol, and when he says that "medical men are perfectly well aware of the fact that overfeeding and under and improper feeding are accountable for far more misery and suffering than drink causes" he states what certainly cannot be proved, and ignores the truth that a large part of the poverty which causes underfeeding is due to wasteful expenditure on alcoholic drinks. The author seems to claim to write as an authority on gastronomics, and discusses the most out-of-the-way dishes and wines as if they were familiar to him. His preferences are largely those of an Austrian—for example, in according the highest place to Styrian chickens, to Tokay as a dessert wine and to the light wines of Austria and Styria for drinking with dinner. Contrary to English opinion, he recommends that champagne should be "well iced" before being drunk, while he outrages British feeling by quoting with apparent approval that "port is one of the worst dessert wines it is possible to drink." Another evidence of the author's standpoint being not that of this country is that he speaks of "specially fattened carp," which are rarely seen here, and omits our common mackerel (he is speaking of fish containing a large amount of fat), and also in his prejudice against tea, which he says can only be "admitted at the breakfast table on sufferance." We are content to bow the head and accept his supercilious disparagement of English cooks and cooking, yet we think the ordinary domestic cookery of well-to-do houses is at least equal if not superior to that met with in Germany, while ignorance of cooking amongst the poor seems to be an evil which is felt almost as much with them as it is with us. The book is well written, and the author has collected information about eating and drinking from all times and all parts of the world, and has enlivened his pages with many anecdotes of celebrated men and *bons vivants*. It is a pity that he should have allowed several misprints to pass, as there are mistakes or misprints in both of his French mottoes, and on page 137 "alkaloids" should be "alcohol" and "hydrogen" should surely be "nitrogen." His reference to beri-beri as a disease due to vegetable food, which he uses as an argument against vegetarianism, suggests that he has not grasped what recent work has shown us—namely, that the disease in question results, not from the vegetarian diet, but from the grain being deprived, when cleaned by machinery, of certain elements which are necessary for health. We cannot help doubting whether all the author's opinions so dogmatically expressed are based upon an experience that can justify them, for many of his comments suggest that he is speaking rather from hearsay than from personal knowledge. Nevertheless, he has written a lively and entertaining book, which we have no doubt will find many admirers among those who wish to eat and drink well.

Dr. G. CARROLL SMITH'S book, entitled, *What to Eat and Why*,[8] is, in the words of the preface, an attempt to place "before the medical student, and particularly the active, busy practitioner, a book describing the fundamental elements of food and the principles underlying its use, the essential reasons why a change of the diet in certain diseases is desirable, and how this change may be made in the most practical, time-saving way." After a short introduction, in which the modern scientific bases of dietetics are described, the book proceeds to discuss the dietetic treatment of particular diseases, including not only those of metabolism, but such conditions as bronchitis, emphy-

[7] *Common-sense Dietetics.* By C. Louis Leipoldt, F.R.C.S.Eng. London: Williams and Norgate. 1911. (Post 8vo, pp. 255. 2s. 6d. net.)

[8] *What to Eat and Why.* By G. Carroll Smith, M.D. Philadelphia and London: W. B. Saunders and Co. 1911. (Med. 8vo, pp. 310. 12s. net.)

sema, leukaemia, and others, which are not ordinarily regarded as presenting special dietetic indications. Dr. Smith does not write carefully, and his style is peculiar, as he talks about excessive protein food "clogging the kidneys and liver with ash"; his grammar is not impeccable—split infinitives abound; "gastro" is used as equivalent to gastric." French words are written without accents, and German words often without the modification; such a well-known writer as Ziemssen appears as Ziemson, and Lieberkuehn as "Luberkuhn"; cream of tartar is spelled "tarter," and in his ascriptions his history of disease is wofully short, recent American and German writers getting credit for what was known to their and our grandfathers. With regard to practical matters, he advises the reduction of "all healthy adults over 50 years of age who are more than 10 lb. overweight." He asserts dogmatically that the principal meals should be in the morning and at midday, in spite of the fact that the custom of large numbers of mankind, due probably to climatic considerations, is opposed to this rule. He gives a good many tables, which would be more useful if they were fuller and more accurate; but he gives none of purin foods, and his table for diabetes is scanty. His dietetic directions for chronic gastric catarrh are insufficient, while he makes a serious mistake in recommending gastro-enterostomy for atonic dilatation of the stomach. Under ulcer of the stomach he talks about the Lenhartz treatment, but does not give its details, and mistakenly says it consists of stomach feeding "within a few days after the haemorrhage occurs," whereas its essential feature in this respect was that Lenhartz allowed no interval. The author's dieting of typhoid fever is unnecessarily complicated, and we do not agree that "when the patient has only four or five stools daily it is better not to try to restrict the number." In our opinion the book is not a safe guide, nor is it on a level with the present high standard of American medicine.

NOTES ON BOOKS.

DR. GRAHAM GRANT has issued a second edition of his book entitled *Practical Forensic Medicine*.[9] Its scope is better defined by the subtitle, "A Police Surgeon's Emergency Guide." It deals with all the special calls made upon medical knowledge and natural acumen by the office of police surgeon, and the titles of certain chapters—for instance, Drunk or Sober? Drunk or Dying? Fractured Base—indicate the practical character of the book, which is conveniently arranged for ready reference. The author has been assisted by various expert friends in dealing with special subjects, and acknowledges general indebtedness to Dr. F. J. Smith, editor of *Taylor's Medical Jurisprudence*. Dr. Grant adheres to some opinions expressed in his first edition which elicited criticism, but has taken pains to indicate that the opinions are personal and may not be universally accepted. He writes in a condensed and yet racy style, and many of his cases and stories will serve as useful warnings and sign-posts to medical men who do not hold an official position as police surgeon. It contains also an excellent chapter on inquests, with a table of notes for a *post-mortem* examination which will be very useful to any medical man who has not already had much experience in these matters.

The irregularity in the publication of TIGERSTEDT'S textbook on physiological methods,[10] of which parts of the first, second, and third volumes are in our hands, is a defect in an otherwise very valuable book. Judging from the chapters which have already appeared, this publication promises to be a standard work on physiological methods, and one which every library will be compelled to include among its works of reference. It may be recommended to senior students and to practitioners who wish to keep well abreast of the time in respect to physiology, but the various articles are somewhat too much of the nature of what are usually regarded as monographs to find much favour with the hard-driven student or busy practitioner. Nevertheless the loss will be theirs, for not only the material but also the manner in which it is presented are excellent. In the third and fourth parts of volume i metabolism is dealt with by Zuntz and Caspari, respiration by the editor, calorimetric determinations by Rubner (this account might be more complete, inasmuch as the description of Atwater and Benedict's work is rather scrappy, and no mention even is made of Hagemann); graphic registration, including general principles and experimental research on the organs of warm-blooded animals, is dealt with by Frank and Tigerstedt. In the fourth part of volume ii Frank is responsible for haemodynamics, while in the first part of volume iii the sensory functions of the skin are treated by von Frey, and the investigations of the senses of smell and taste by Zwaardemaker. The work is well illustrated.

A comprehensive work[11] recording practically all that is known on human and animal bio-chemistry is in course of publication; it is edited by Professor C. OPPENHEIMER, of Berlin, assisted by a large number of well-known biochemists. This work is now nearly complete, the 22nd, 23rd, 26th, 27th, and 28th fasciculi being in our possession. No. 29 completes the series. Nos. 22 and 23, appearing together, were issued in 1909, and end vol. ii. A very excellent article by L. Pincussohn on the physical chemistry of urine, and one by R. Tigerstedt on energy, suffice to form a guarantee of the high character of the publication. In vol. iii the subject of metabolism receives treatment of varying kinds at the pens of Morawitz, Neuberg and L. Mohr, Weinland, Stern, von Wendt, and Oppenheimer with Pincussohn. The article on ferment action by Ernst Stern, and that by the editor and Pincussohn on intermediary metabolism are careful compilations of intrinsic value. We anticipate that the work will find many friends.

We have received parts of a textbook on the surgery of the ear and upper respiratory passages edited by Dr. KATZ, Dr. PREYSING, and Dr. BLUMENFELD.[12] The work will consist of a series of articles on various subjects coming within the title of the work, but only two of these are complete; two others will be concluded in subsequent fasciculi. The articles completed are on the treatment of the stenoses and the surgery of the external nasal organ by Pieniazek and Seifert respectively. The articles not yet concluded are by Port and Boenninghaus on protheses and operations on the accessory cavities of the nose. The articles contain sound matter, and are sufficiently detailed to serve for reference.

It is not by any means every writer who is capable of producing a really good school story. The cleverest novelist may fail in his portrayal of what Disraeli justly termed "the microcosm of a public school"; and this is often through no lack of sympathy or knowledge, but simply because he who is writing has, all unconsciously, lost touch with those of whom he writes. It is for this reason, possibly, that one is conscious of a certain feeling of disappointment after reading Mr. E. W. HORNUNG'S new novel, *Fathers of Men*.[13] The plot of the book, indeed, is excellent, being both original and striking; but for all his skill the creator of Raffles and Stingaree has hardly succeeded in making it convincing. The gradual transformation of Jan Rutter the stable boy into a worthy product of a famous public school is too automatic to be entirely true to life; and apart from his schoolboy hero, Mr. Hornung's characters are all more or less stereotyped and conventional. But the story goes with a swing from start to finish, and to many readers not the least of its merits will be the author's whole-hearted belief in the much-maligned English public school system—a system which, with all its faults, is yet able to boast that "We don't go in for making scholars. We go in for making men."

The new edition of Nisbet's *Medical Directory*,[14] that for 1912, differs from its predecessors inasmuch as the christian names of practitioners are now given in full, an alteration desired, the editor says, by many, and certainly in our judgement an improvement. For this reason apparently the number of pages in the volume has been increased by about 70, but it remains of convenient bulk, and for many purposes the fact that all the names are in

[9] *Practical Forensic Medicine: a Police Surgeon's Emergency Guide.* By C. Graham Grant, L.R.C.P.and S.Edin., V.D., Lieutenant-Colonel R.A.M.C. (T.), Barrister-at-Law (Gray's Inn). Second edition. London: H. K. Lewis. 1911. (Cr. 8vo, pp. 98. 2s. net.)

[10] *Handbuch der physiologischen Methodik.* Edited by R. Tigerstedt. Volume i, parts 3 and 4; volume ii, part 4; volume iii, part 1. Leipzig: S. Hirzel. 1910-11. (Sup. roy. 8vo. The price of the various parts varies between 3 and 14 marks.)

[11] *Handbuch der Bio-Chemie der Menschen und der Tiere.* Edited by Professor Dr. Phil. et Med. Carl Oppenheimer, assisted by many others. Jena: Gustav Fischer. 1909, 1910, 1911. (In 29 fasciculi. Price 5s. per fasc.)

[12] *Handbuch der speziellen Chirugie des Ohres und der oberen Luftwege.* Edited by Drs. L. Katz, H. Preysing, and F. Blumenfeld. Würzburg: Curt Kabitzsch. 1911. (Vol. i, fasc. 1, 6s.; vol. iii. fasc. 1 and 2, 12s.)

[13] *Fathers of Men.* By E. W. Hornung. London: Smith, Elder and Co. 1912. (Cr. 8vo, pp. 377. 6s. net.)

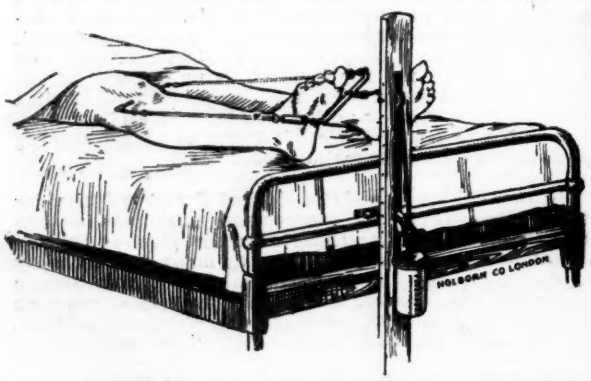
[14] *Nisbet's Medical Directory* for 1912. London: James Nisbet and Co. (8vo, pp. 930. 8s. 6d.)

one list and not subdivided according to countries is a convenience. Space is again found for a local directory, giving the names of practitioners in each locality.

MEDICAL AND SURGICAL APPLIANCES.

Limb Extension.

The appliance known as the Codevilla-Steinmann pin, which aims at making limb extension more perfect by applying the traction directly to the bone itself, has been modified by Mr. Alexander MacLennan, M.B., C.M., of Glasgow, as shown in the annexed diagram. He writes as follows: It is unnecessary here to refer to the indications for the use of this instrument, but it may be pointed out that by it a much greater extending force may be applied than by any other means. The pins are made of steel in varying sizes, and are tested to bear a strain of 40 lb. The head is expanded to give a good hitting surface, and is shaped to permit of a spring hook being attached after the pin has been driven home. The point is threaded so as to take a nut after it pierces the bone. This nut has a form similar to the head; the nut should jam the point, which must not pass through it. The nut thus acts as a guard to the point, and at the same time makes a firm solid end. The skin is punctured by the scalpel and the pin driven through by means of a hammer, and as it is always to be forced through cancellous bone there is no risk of splintering or cracking the bone. I think it much better to hammer the pin into position rather than pass it after drilling. A couple of chains are then attached to the pin by means of two spring hooks; the other ends of the chains are attached to two spring balances. The balances accurately indicate the amount of traction upon each end of the pin. The pull imparted to the chains is transmitted by the crossbar, which is placed beyond the sole of the foot. If the extending force is applied exactly in the middle of the cross bar the pull on the chains is equal, but if it is desired to pull on the chains unequally, the large spring hook may be placed more to the side of the cross bar to whose chain it is intended to give the greater strain.



This naturally tends to tilt the pin, and so it is possible to correct a lateral displacement of the fragments. The cross bar is notched in a graduated manner for this purpose. Extension may be by weight and pulley, or be arranged for by the tension of the spring balances, which are fixed to a rigid support (the latter plan, however, requires more adjustment and attention). A glance at the balance scales will show the amount of pull upon each side. These pins may be conveniently employed with the Hodgen or other swinging splint. The apparatus may be sterilized completely, and is simple and efficient, and may be obtained from the Holborn Surgical Instrument Company.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

The Insurance Act.—Hospital Ships.

The annual dinner of the West London Medico-Chirurgical Society took place at the Hotel Great Central on February 8th, when Mr. McAdam Eccles, President of the Society, occupied the chair. After the usual loyal toasts had been duly honoured, the Chairman said that the society eschewed politics and ethics, but in the present crisis he ventured to break that unwritten rule and ask Sir Philip Magnus, who had been a champion of the cause of the profession in the House of Commons, to speak on the Insurance Act.

Sir Philip Magnus said that the discussion that was now going on in the various newspapers with regard to the Act should have taken place before the bill was introduced, and certainly long before it became an Act of Parliament. With regard to the £2 limit, which it fell to his lot to propose in the House of Commons, he had always had great sympathy with the medical profession in endeavouring to insist upon the limit which was one of the now celebrated six cardinal points, and he firmly believed that if the medical profession had been differently represented, and also if they had shown the same amount of resolution and determination which had been evinced since the bill became an Act, all the six cardinal points would have been obtained in the bill itself. The £2 limit he considered was a most important point, as it was essential for the profession to limit if possible the area over which the contract system of attendance was to extend. The contract system might be essential with regard to the poorer classes, but if it was to be far extended it would deprive the ordinary medical practitioner of his little leisure and the opportunity of making some private practice, so that while the system might be desirable on a limited scale, it was like some drugs which, when applied to the living organism in small quantities, produced very good effects, but if given in too large doses destroyed the organism entirely; what was true of the human organism was also true of social bodies. If the Insurance Act were studied it would be found that about three-fourths of it was quite different from what it was when introduced, as pages and pages of amendments had been passed in the House of Commons without any discussion whatever. Under the Act there was practically no income limit, since any person whose income had not exceeded £160 per annum at the time of his insuring, and who had been an insured person for five years, might become and remain a voluntary insurer eligible to receive medical benefit, whatever his income might later amount to. With regard to future action it was necessary above all for the profession to hold together and present a united front. Mr. Masterman had, he thought, made a foolish threat the previous day when he stated that if the Government were unable to come to terms with the medical profession they would take the medical benefit out of the Act altogether. If this were done he asked what would become of the Insurance Act as a measure for curing sickness. The Chancellor of the Exchequer had made a mistake in not taking the medical profession into his confidence before he introduced his bill. The legal opinions which had been taken with regard to the powers of the Commissioners showed that it was not quite certain whether they had power to grant the conditions which the members of the medical profession rightly required in order that they might serve under the Act, and he would suggest that the profession made quite certain that the Commissioners had the power to grant the conditions and that the assurance was given in proper legal form. If the Commissioners did not possess the necessary power, then the only thing for the profession to do was to endeavour to obtain from the Government an amending Act giving the necessary conditions.

The toast of "The Imperial Forces" was proposed by Mr. J. G. Pardoe.

Sir James Porter, K.C.B., Medical Director-General, R.N., in responding for the senior service, mentioned that

in May next the medical wing of the Naval College would be opened. Within the last few days contracts had been made for the first hospital ship of the world, a ship specially built for the purpose for the Royal Navy. Much thought and care had been expended on the plans.

Sir W. L. GUBBINS, K.C.B., Director-General, Army Medical Service, in responding for the military services, referred to the great saving of life due to antityphoid inoculations, a movement in which the medical officers of the British army had been pioneers.

Mr. MCADAM ECCLES proposed the toast of "The West London Medico-Chirurgical Society." After speaking of the success of the society, which had now reached its thirtieth birthday, he referred to the suggestion that there was a split between general practitioners and consultants with regard to the National Insurance Act, and said that their society was an absolute negative to such a suggestion; the general practitioners and the much-abused consultants were at one on the matter, and it was societies such as theirs, and such social gatherings as they were at present enjoying, that brought them together.

Mr. FREDERICK LAWRENCE, a past president and the oldest member of the society living, responded to the toast and referred to the early history of the society.

Dr. S. D. CLIPPINGDALE proposed the toast of "The Kindred Societies and Guests," which was responded to by Dr. J. MITCHELL BRUCE as President of the Medical Society of London, Mr. W. WHITAKER THOMPSON, Mayor of Kensington, and Dr. J. A. MACDONALD, Chairman of the Council of the British Medical Association.

Dr. MACDONALD said that when asked to respond to the toast he thought in the circumstances that it would be better not to do so, because he knew that he was one of the suspects; but from members of a society such as theirs he knew perfectly well that every one would receive fair play. The meeting that evening spoke very much for the way in which medical men were united. For the past year and a half his place had been in anything but a peaceful atmosphere, but he hoped that the medical profession would unite and see that it obtained all that it required and all that it had every right to get under the Insurance Act.

The toast of "The Chairman" was proposed by the MASTER OF DOWNING (Mr. Howard Marsh), and the CHAIRMAN'S acknowledgement brought the proceedings to a close.

During the evening a message expressing good wishes was sent to the chairman of a dinner being given to the Presidents of the Royal Colleges of Physicians and Surgeons by University College men, and a reply from Sir John Tweedy reciprocating the wishes was received.

THE MEDICAL FEDERATION, LIMITED.

A MEETING of the members of the medical profession practising in Bristol and the district took place on Tuesday, February 13th, at the Royal Hotel, Bristol, at 3.30 p.m., to consider the report of the Special Committee on Medical Federation. Four hundred invitations had been issued, and about 250 were present.

Dr. T. M. CARTER, who was voted to the chair, dwelt in his opening remarks on the pleasure it gave him to take the chair, especially as he had been in the chair as Chairman of the Division when the federation movement originated at the great meeting of the Bristol profession on May 23rd. The key to the whole situation was the unity of the profession, and any movement which tended to strengthen that unity must be for the ultimate good. He referred to recent political speeches, and said that as a consistent Liberal he strongly resented the imputations of political bias on the part of those doctors who opposed the Act which were so frequently being hurled at the profession. In sketching the growth of the Bristol scheme from its inception he said that great care and expense had been necessary, and referred to the fact that the temporary board of directors was practically the Executive Committee of the Division, and the managing directors and secretary were respectively the Divisional Secretaries and the Chairman.

The SECRETARY of the Company (Dr. H. F. Devis), in presenting the report, first dwelt on all the various steps which had been taken by the committee up to the present time, laying emphasis on the fact that no important step had been taken without the knowledge of the executive of the British Medical Association. Cognizant of all Bristol had done, the Association had not disapproved of their work, but, in some particulars at least, had expressed its distinct and emphatic approval. The Bristol executive had at various times been in communication with various officials of the Association, and had invariably received encouragement from them. It would be impossible to say that the slightest disloyalty to the Association had at any time appeared in the past history of the federation movement, and as long as the conduct of affairs lay in the same hands it was perfectly safe to predict an equal loyalty for the future. At the present time the profession had failed to secure under the Act even the minimum demands of the six-point policy. More than this, it would be impossible to get under the Act some of these points. Even had the whole of the six points been secured under the Act, an Act which contained powers such as the absolute autocracy of the Commissioners and the right of a lawyer to annul a medical certificate, with a possible penalty to the medical man of three months with hard labour, was not a fit Act for any self-respecting medical man to work under. The profession of Bristol was unanimous, the profession through the country was almost unanimous in its determination not to work under the Act. This was an easy determination, and one that would be kept by the consultant and the practitioner among the wealthy classes. But what about the men who worked among the poor? They were just as determined, perhaps even more, than their wealthier brethren. But what had they to rely upon to assist them? What had the Association to rely upon in this tremendous fight? The Association relied upon the enthusiasm, public spirit and loyalty of each man; but, useful and admirable as these were, they were a poor weapon against ruin. The Association relied upon 27,000 undertakings, which had been acknowledged to be conditional upon guarantee of indemnity, and which, without such guarantee, would not be worth the paper they were written on. The Association relied on a voluntary subscription list, which had been raised for the purposes of compensating members of the Association. Legal opinion, opinion of men at head quarters, and each man's own common sense would show that both the raising of such fund, and the using of it for such a purpose as compensation was absolutely illegal, and, therefore, the whole fabric of the Association's defence fell to the ground. The Association had for years been endeavouring to acquire powers of money raising, and of indemnification, but had for various reasons failed. It would take from two to three years to acquire these powers in the ordinary way. But there was a shorter way—by amalgamating with a corporation which already possessed these powers. The only medical organization in the kingdom which possessed these powers was the Medical Federation, Limited, and it was in order to give these powers to the Association that the Federation had been organized and registered by the Bristol Division. The Federation was a company limited by a £5 guarantee, with powers to raise money in any legitimate manner, and to use money to protect, indemnify, or compensate. It had also powers to protect the honour and interests of the profession whenever and however these might be assailed; furthermore, to promote scientific research and to publish a journal. The Bristol Committee, acting on the expressed wishes of the Organization Committee, intended to start the new company and bring it to a successful issue, and as soon as a sufficient number of members of the Association were also members of the Federation, amalgamation was in their own hands, and with it the acquisition of those powers the Association so needed and desired. It was impossible for the Association itself to manage, control, or finance this movement, for by so doing it would place itself outside the memorandum, which was of a very limited character. The effect of the Federation on the Association would be to strengthen it and keep it together, not to split it, for it was a movement from within the Association itself.

Dr. SCOTT-WILLIAMSON, the managing director, explained many details in the memorandum and articles of association, and answered many questions.

Dr. J. J. S. LUCAS proposed the following resolution:

> That this meeting approves the action of the Executive Committee appointed to carry out the resolution passed at the meeting held on May 23rd, and accepts the formation of

the Medical Federation, Ltd. (the memorandum and articles of which have been laid on the table), as the first step towards uniting the profession on trades union lines.

This was seconded by Dr. BERTRAM ROGERS and carried with great applause.

Dr. H. F. Devis is secretary of the Medical Federation, Limited, and the registered address is Lion Chambers, Broad Street, Bristol.

LITERARY NOTES.

MESSRS. WITHERBY AND CO. will shortly publish for Mr. P. H. Bahr two important reports, the one on *Filariasis and Elephantiasis in Fiji*, and the other on *Dysentery in Fiji*. The reports, which embody the results of a year's study of these subjects in Fiji, are to be illustrated with plates in colour and monochrome, and charts.

There is perhaps no more common sign of ill-health in childhood than the frequent occurrence of severe sick headaches. These may be due to a variety of causes, some of which are often the premonitory symptoms of serious illness. The February number of *The Child* contains an interesting article by Dr. Hugh T. Ashby on the diagnosis and treatment of the different types of this most troublesome complaint. "Headache accompanies so many diseases," remarks Dr. Ashby, "some very serious and some only trifling, but . . . every headache in a child should be regarded in a serious manner, and be treated accordingly," though great care should be taken at the same time to encourage the little patient to bear the pain as bravely as possible, and the least tendency to malingering should be at once discouraged. The most frequent causes of headache in growing children, according to Dr. Ashby, are undoubtedly anaemia, overwork, and too rapid growth; but they may also arise from some deep-seated affection of the eye or ear, whilst adenoids, and all diseases of the nose, are a prolific source of pain through the congestion they produce in the head. On the other hand, a badly-ventilated schoolroom or a lack of sufficient exercise is often at the root of the trouble, which disappears as soon as these defects are remedied. Again, headaches may be hereditary, and it is well known that highly-strung and neurotic children suffer far more from migraine than do their less nervous and impressionable companions. Finally, Dr. Ashby is of opinion that decayed teeth, which interfere so seriously with the proper digestion of the food, "often set up and keep up periodic attacks of headache," though this is not nearly so usual in children as in adults. Another article that should prove useful to those in charge of young children is Dr. John H. Yearsley's short account of "Injuries to the eye in early childhood," which is also included in the February number of *The Child*. The number also contains some excellent advice as regards moral training in youth, by Dr. H. Macnaughton-Jones and Miss Isabel D. Marris; whilst Mr. J. Courtenay Lord has contributed an interesting account of the children's courts, and Dr. Robert J. Ewart writes with his accustomed skill and vivacity on the influence of prenatal conditions upon the subsequent development of the child.

Dr. W. L. Storey (Belfast) writes:

> In the course of your very instructive remarks in the JOURNAL of January 27th, on the quantity of the "e" in enema you observed—
>
> > that pronunciation [enĕma] is in accordance with the tendency of our language to throw the accent as far back as is possible consistently with ease of articulation.
>
> By a fortunate coincidence I have just come across an extract from a letter in the *Athenaeum* of some years ago bearing out your case. The writer says:
>
> > In course of time as soon as a word has become naturalized and at home in the language the accent is almost invariably thrown back to the first syllable. Instances in point are: Despícable, formídable, hospítable illústrate, interésting, which are now déspicable, fórmidable, etc. I recollect when Deuterónomy was pronounced as I accent it. It is now Déuteronomy, a cumbrous unmanageable word, as is láboratory, but they are bound to obey what I believe to be the law of English pronounciation. A curious illustration of this law is furnished by the words refectory, confessor, confession, which are pronounced by my brethren of the Roman Catholic religion—because they are more familiar with those terms than the most of us—réfectory, cónfessor, cónfession. And again when we speak of the guardians of law and order as the police, the criminally disposed classes, who were much more familiar with them than we, poor things! speak of them as the pòlis. Some words are on their way to change. For example, I, and I daresay most of your readers, have been in the habit of saying robùst, but I once heard the creator of Sherlock Holmes pronounce it ròbust.
>
> The standard of English pronunciation is usage—the best usage of the best people.

I myself have heard farmers and labourers in the West of Ireland say that they had received "a registered letter from America."

Bearing in mind, then, the reason why Bill Sikes and his congeners place the accent in *police* on the first syllable, may we not logically conclude that enĕma will by-and-by disappear in favour of enĕma?

The pronunciations réfectory and cónfessor (cónfession we have never heard) are traditional among Roman Catholics and probably represent the original English pronunciation. In the *New English Dictionary* it is said that the historical pronunciation from AF. [Anglo-French] and ME. [Middle English] *confessour* is *cónfessor*, which is found in all the poets, and is recognized by the dictionaries generally, down to Smart (1836–49), who has cónfessor in the senses of one who avows his religion in the face of danger and one who hears confessions, and conféssor as meaning one who admits the commission of a crime. For these, it adds, Craig (1847) has cónfessor and confessor, but conféssor is now generally said for both. The last statement is inaccurate as far as Roman Catholics are concerned. There is some difference of usage, however, among them regarding the word when employed to describe St. Edmund the Confessor.

The February number of *Knowledge* contains an interesting note on left-handedness by Professor J. Arthur Thomson. He says the question whether the condition is inherited is still doubtful, but Jordan has investigated 78 families, dealing with 3,000 individuals, and his evidence goes to show that the trait passes from father to son. It is supposed that left-handedness is associated with the greater development of the right hemisphere of the brain. It is, however, important to distinguish between constitutional tendency and the result of education. Thus most parrots receive with the left foot, but that is because they are ordinarily approached in feeding with the right hand. When the left hand is consistently employed in the feeding, the parrot responds with its right foot.

SCIENCE NOTES.

REMARK is made in *La Nature* (December 30th, 1911), in an article by Professor Magini,[1] with reference to the rapid disappearance of the black buffalo from Italy. The herds of these animals used to form a characteristic feature of the Roman Campagna, with their white-haired watch-dogs and their "cowboys," armed with the remarkable-looking trident with which they guard and control the animals. These buffalos are believed to have been introduced into the Tuscan and Pontine marshes and into the marshland of Paestum and Basilicate in the reign of the Lombard king, Agilulf, about the year A.D. 600. They were brought from Hungary, which is also supposed to be the home of the long-horned oxen of Italy. At the present day the flesh of the black buffalo is regarded as inferior to that of the ox, although in point of fact it is much more nourishing, and it is now eaten only by the lower classes and by the Jews. There appears, however, to be still a considerable quantity of it sold every year, for Magini does not hesitate to warn the Italian Government that this is at least one of the causes in the rise of the price of meat. According to his computation, the number of head in the whole of Italy some years ago was as high as 65,000, whereas at the present time there are not more than 550 in the Pontine marshes, while during the last ten years there has been an annual sale of 1,000 head at Naples and 6,000 at Rome. These remarks are interesting, not only economically, but also from the biological point of view, as further evidence of the curiously unfortunate fate which has overtaken the whole tribe of buffalos.

[1] *Bull. Soc. Nat. d'Acclimatation*, November 1st, 1911.

British Medical Journal.

SATURDAY, FEBRUARY 17TH, 1912.

THE COMING REPRESENTATIVE MEETING.

THE work which the Representative Body has to do at the meeting beginning on Tuesday next is of momentous importance, and every member of the Association, and indeed of the profession, will earnestly hope that means will be found to compose the differences within the profession which have recently been disclosed. Encouragement for this hope will be found in the realization of the fact that the differences are far less deep than might at first sight appear; points upon which the profession are unanimous have been obscured by insistent reiteration of matters of detail, no doubt often important details, upon which opinion is not settled, and by recriminations and personal attacks, which, in sympathy with many Divisions which have passed resolutions on the subject, we hope the Representative Meeting will brush aside.

As evidence that there is a large measure of agreement in fundamental points we may take the letter published last week from Dr. Helme, who has been one of the severest critics of the Council of the British Medical Association, and compare his recommendations with those with which the report of the Council concludes. The Council recommends that it should be instructed to press upon the Government and the Commissioners the further conditions necessary for securing the requirements of the profession, and to notify the Insurance Commissioners that no negotiations will be entered into with the Insurance Committees until the Representative Body is satisfied that the requirements of the profession are conceded. While recommending the appointment of provisional local Medical Committees in every insurance area, it makes this recommendation only on the understanding that such Committees shall be constituted without prejudice to the question whether they shall later accept recognition as statutory local Committees. Dr. Helme recommends that the profession should at once form local branches corresponding to the administrative areas of the Act, but independently of the Act, and that these Committees shall be ready to be recognized by the Commissioners under the Act when the time comes—that is, when the six points are guaranteed. Dr. Helme says that it is necessary that locally the profession should come to some agreement within itself, and the Council recommends that it should be instructed to take steps to organize the profession in order to secure, failing the provision of adequate remuneration under the National Insurance Act, that no person shall be able to secure medical attendance under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representative Body. Dr. Helme would have the profession stand clear of the Act until the six points are guaranteed, and this apparently comes to much the same thing as the Council's recommendation that it should be instructed to notify the Insurance Commissioners that no negotiations will be entered into with any local Insurance Committee until the Representative Body is satisfied that the requirements of the profession are conceded. Dr. Helme recommends that local panels should only be formed when each Division is satisfied. The Council expresses the opinion that to use the machinery of the Act by, as we understand, approaching the Insurance Commissioners would not compromise the ultimate rights of the profession to refuse to form panels if its requirements are not granted.

The Representatives will have had the opportunity of reading the references to the medical question made by Mr. Lloyd George at the London Opera House last Monday in his speech to the political organization which now bears the name of the Liberal Insurance Committee. He followed up the declaration of the Chief Government Whip in Edinburgh on Saturday by a speech which for the first hour or so was frankly partizan, and this part of his speech we have excused ourselves from reporting (SUPPLEMENT, p. 177). Nobody can complain that Mr. Lloyd George should have indulged in party quips and flouts, for the business of a party man is to back his party, but it is a fact of which reasonable cool-headed men may wisely take note. As we have ventured to say before, the profession cannot expect disinterested support from any political party; it must rely upon its own union and the justness of its cause. To its would-be political friends let it say, *Dieu me garde de mes amis; pour mes ennemis, je m'en charge.*

Mr. Lloyd George in his public references to the medical profession has more than once used biting phrases which drop easily from his tongue but leave a sting of injustice which terribly complicates public business. On this occasion he held himself more in restraint than on some previous occasions, and after a passing warning to the doctors to beware of the blandishments of the opposite political party, he went on at once to a serious discussion of the situation as it is and as it may become. He denounced what he considered the "rude ineptitude" of the Royal Colleges in demanding an amending bill and refusing to discuss the present Act, and to this accusation the Presidents of the Royal Colleges in England have published a rejoinder which has appeared too late to be more than mentioned here.

Mr. Lloyd George, however, went on to admit that the action of the British Medical Association in declining the invitation of the Insurance Commissioners at a few days' notice and when it was known that a special meeting of its governing body was about to be held, to a private conference on the fundamental questions now exercising the profession, was not unreasonable; he admitted also the difficulty of the position in which the profession has been placed, and the reality of its grievances, and that it had good grounds for viewing the future with apprehension, though he of course took an optimistic view of the Act. He admitted that harsh, unconscionable control by the friendly societies was a real grievance, but contended that, in spite of the fact that the insured persons constituted a majority of the local Insurance Committees, the Act

would diminish if it did not abolish the grievance, since the representation of the insured was diluted by the representatives of the Government, of the County Council, and of the medical profession, since the committee, in his opinion, could not arrange terms of payment without consulting the local Medical Committee, and since all the arrangements were subject to an appeal to the Insurance Commissioners. Clearly, he expects the Commissioners to take a serious and independent view of the obligations the Act imposes upon them. In touching on the income limit he laid stress on the same point—the need for backbone in the Insurance Commissioners, since his only remedy for the admitted medical grievance on this score was that the Act empowered the Insurance Committees to fix an income limit in a district, and that, as the Insurance Commissioners had full powers with regard to the approval of contracts, they would be able to influence the decision of the committees on this point. As to the Harmsworth amendment he was defiant; from it, he said, the Government, whatever happened, would not budge; he maintained that it simply dealt with existing rights and protected existing institutions, and did not affect the bulk of the insured persons. He admitted that it was an exception to the freedom from friendly societies' control which he contended the Act afforded; and it is certain that the profession does not consider the proviso permitting free choice of doctor an adequate safeguard, and is not at all satisfied that the subsection will, if put into operation, affect only existing rights and institutions. In the note on the subsection in the book on *National Insurance* by Messrs. Comyns Carr, Garnett, and Taylor, it is said that the word "system" is a "generic word which may be held to allow of indefinite multiplication of separate medical institutes or medical clubs, grouped under one existing system, and acting independently of the Insurance Committees, provided that the system itself is approved by the Committee and the Commissioners." The further opinion is, however, expressed that the words "treated as, or as part of," signify that if "the provision for medical attendance and medicines made by the institute falls short of what the Insurance Committee itself provides for other persons, the contribution from the Committee towards the cost of the institute may be proportionally reduced," and also that the words "towards the expenses" involve "that the institute would not be allowed to make any profit for other purposes out of the contribution given by the Insurance Committee."

The third point Mr. Lloyd George made was that in districts where there was no contract practice that system need not be set up under the Act. In any such area, he said, the money for medical benefit could be paid into a general pool for that area; the doctors could charge for their attendances, and the insured must make up the adverse balance. This dictum requires explanation; as it stands it appears to imply a *pro rata* payment. He contended that no doctor would be forced by the Act to take contract practice, but he slurred the point that in an area where a pooling or some similar alternative system was not in force the doctor must apparently accept the contract system or stand out altogether. The same fallacy underlies part of his answer as to the financial insufficiency of the provision for medical benefit. But the main point in this part of his speech was that he admitted that the matter was open to argument, and added that in his opinion it was for the medical profession to demonstrate that the financial provision was unsatisfactory. We will not press the point that this is not quite the right way of putting the matter, but would merely say in passing that in this case the Government has come to the medical profession with an offer to buy what the profession has not offered to sell. If a man walks into another's stable and offers a price for a horse standing there, and the owner refuses it, the would-be buyer has no right to require or even to expect the owner to name his price; it is for the buyer to make a better offer if the owner shows any disposition to sell at all.

However this may be, the Chancellor of the Exchequer went on to say that if the Commissioners were satisfied that the profession had proved that the financial provisions of the scheme were too limited, it would unquestionably be the duty of the Government to advise Parliament to find all the money necessary. But it seems clear that he still underestimates the amount and kind of attendance, and therefore the total amount of money required, "to provide a satisfactory medical service for the insured people of the country," to quote his own words.

The initial mistake was to base the financial estimates on the old club rates, which were admittedly inadequate even for the limited service rendered. The service now asked is for employed men and women at all ages, without—if we may judge from the resolution of the Manchester Unity and certain other organizations, to abolish medical examinations—any sifting out of damaged lives at entry, and with the prospect of an eventual extension to wives and children.

Up to this point it may, perhaps, be said that Mr. Lloyd George reasoned with the profession; but in his concluding sentences he drew a very black picture of what would befall it if it demanded an amending Act and refused to work under the existing Act. He said that the Government had large suspensory powers. It would be possible still to give all the benefits to the insured, and to hand over the money allocated for medical benefit to the insured persons "through the societies," as he put it. The profession would then, he argued, again have to deal with the societies, the very bodies from which it had sought to escape, and with societies enormously increased in numbers and financial stability. He further suggested that the effect of a "doctors' strike" would be to encourage very greatly the extension and establishment of medical institutes and dispensaries, and that all the safeguards provided in the bill, whether against the societies or the institutes, would be lost. He concluded by saying that the disappearance of these safeguards would only render the Act more popular with the working classes. We doubt this very much, and at any rate the contention can have little weight with the medical profession nor, it might have been supposed, with a statesman imbued with the desire to benefit his fellow countrymen. In any case, all these possibilities are foreseen and discussed in the report of the Council; and though it need not be denied that a difficult and dangerous position would thus be created for the profession, which might not be unwelcome to some of the officials of the friendly societies, yet the Government must understand that rather than submit to terms and conditions of service which it considered unfair and inadequate, the profession, led by the Association, would face the situation depicted in such lurid colours by the Chancellor of the Exchequer. Nor can it be supposed that he desires its realization. It would be a confession of failure. The dissatisfaction would not be confined to the medical profession; it would be shared by the insured persons, whose wishes and

preferences seem sometimes, in the anxiety to ensure a party triumph, to be forgotten in a manner which, remembering the avowed object of the whole scheme, is not only regrettable, but impolitic. Life is as dear to the day labourer as to the millionaire, and his health and strength are even dearer. It will be a cruel deed to impose upon him—for the Act is compulsory—the third best, when the best is only anxious to give itself on just conditions which will make it possible for it to give its best.

At the same time, and though we cannot pretend to any gift of prophecy, it may with some confidence be anticipated that the Representative Meeting will not be disposed to adopt a policy of total abstinence, which in this instance would not be the soberest, but will be prepared to instruct the new State Sickness Insurance Committee, it is advised by the Council to elect, to take steps to open up negotiations with the Insurance Commissioners. These, carried on in the light of day, and with the full knowledge and sanction of the profession, may eventually lead to the solution of difficulties which now seem almost insuperable.

INTRINSIC CANCER OF THE LARYNX.

MACAULAY'S famous comparison of progress to the incoming tide may be applied to the healing art. If one takes a limited period it may seem to be stationary or even actually to recede; but on longer observation it will be seen that gradually one landmark after another is reached and passed, and the advancing flood runs with ever-increasing swiftness and force. Or to present the same image in the words of Arthur Hugh Clough:

> For while the tired waves, vainly breaking,
> Seem here no painful inch to gain,
> Far back through creeks and inlets making
> Comes silent, flooding in, the main.

It was not for many years, and after many apparent ebbings, that the new surgery, of which the illustrious pioneer has just passed away, won complete and universal acceptance. Other instances may be found in the history of the operation for stone and ovariotomy. Methods are proposed and used, at first perhaps successfully; then, owing to crudeness of execution or wrong application, come failures, and the treatment is discarded, to be revived later under more favourable conditions, and finally annexed to the empire of medicine. Sometimes the advance is so slow as to escape the notice of any but those whose scientific interest is directed to a particular region of the body. In the case of the more uncommon diseases, indeed, it may pass without general recognition, and the footsteps made by progress on the sands of time may be more or less completely obliterated unless succeeding pioneers follow the imprints and clear the path towards the goal.

In cases of cancer the *ultima ratio* of the knife still offers almost the sole hope of cure. In too many instances the hope is but small, either because the disease does not come under observation until too far advanced, or because it attacks a region which is, at present, anatomically beyond the scope of surgery. As an example of this may be cited malignant disease of the lower oesophagus. Hidden away in the mediastinum it is entrenched beyond the reach of the knife, and thus compares unfavourably with cancer of, say, the pyloric end of the stomach. What is loosely referred to as "cancer of the throat" has also an unenviable reputation as being a hopeless form of the disease. In regard to the pharynx this may be partially true, but as far as the larynx is concerned it is most important to distinguish two clinical forms. When the disease appears in the form which laryngologists call "extrinsic cancer of the larynx"—that is to say, when it develops in the epiglottis, the aryepiglottic folds, and the pharyngeal surface of the voice box—then, in the words of Sir Henry Butlin, it is indeed "a dire disease."

Women are, as is well known, less subject to cancer of the larynx than men; but when females are attacked, it is generally with this extrinsic form. With males, it is the reverse; although more subject to laryngeal cancer, the neoplasm originates more frequently within the larynx, and generally on the vocal cords. Now, as the paper by Dr. StClair Thomson, published at p. 355 of this issue, amply proves, it is doubtful if operations for cancer in any other part of the body can show such satisfactory results as he has obtained by laryngo-fissure, for to secure a lasting absence of recurrence in 80 per cent. of cases is a feat of which laryngology may be proud. This also is obtained without any crippling operation; a useful if rough voice is preserved, and the patients are able to gain their livelihood, enjoy good health, and join in most of the duties and pleasures of life. Similar results were first obtained by the pioneer work of Butlin and Semon, and the latter so frequently and so insistently called attention to the early symptoms of laryngeal cancer and the really brilliant results obtainable by splitting the larynx that he must be well pleased to see that his successors can but confirm his dicta and results. They start with all the advantages which Butlin and Semon were without when, some twenty-five years ago, they revived the then discredited operation of laryngo-fissure; and thus it is that Dr. StClair Thomson is able to show that in none of his cases was there any error of diagnosis, and that from the operation he has not had a single death.

Intrinsic cancer of the larynx is not a common disease, but we imagine that the deaths in unoperated cases, or in cases which present themselves too late for a hopeful result, far outnumber the lasting cures which have been published. Yet, if we read Dr. StClair Thomson's paper aright, there seems no reason why this proportion should not be reversed; on the contrary, there is ground for hope that every case should, under normal conditions, be lastingly cured. Apart from the necessary conditions—namely, a patient in a suitable state of health to stand such an operation—only two other requirements seem necessary. These are, early diagnosis of the disease, and a properly carried out laryngo-fissure. It cannot be expected that every practitioner can make a diagnosis which depends so much on technical skill and a trained eye; but as, fortunately, the chief subjective symptom is persistent hoarseness, it is the duty of each of us to urge every patient with such a symptom to obtain an expert opinion. The operation, as Dr. StClair Thomson observes, has been developed and improved by the steps by which it has been simplified. But the simpler an artistic performance appears the more difficult it is generally to execute well. The operation of laryngo-fissure must remain in the hands of the expert laryngologist, or of those well trained in the surgery of this region, just as the delicate operations on the eye are nowadays handed over by common consent to the ophthalmologist. In such hands there appears no reason why such a striking record as that in the paper referred to should not become more general.

THE PRESENT POSITION OF THE PROBLEM OF TSETSE FLIES AND SLEEPING SICKNESS.

THE publication recently of the Eleventh Report of the Sleeping Sickness Commission of the Royal Society affords a fitting opportunity for taking a brief general survey of the question of sleeping sickness in relation to its transmission by tsetse flies as it at present stands. Those who have read the notes on the subject which have appeared from time to time in these columns will be aware that, through the results of the research of investigators in the laboratory and the observations of medical officers in various districts, a condition of affairs is now known to exist which is undoubtedly of serious importance in connexion with the welfare of the territories of tropical Africa. Three lines of inquiry have been prosecuted more especially of late—namely, as to the real manner in which the tsetse fly (*Glossina palpalis*) acts as the transmitter of the trypanosome of sleeping sickness (*Trypanosoma gambiense*); as to the possibility of wild animals serving as a source or "reservoir" of the parasites for the flies; and, lastly, as to whether other species of tsetse fly also convey the disease.

Both Bruce and his colleagues of the third British Commission to Uganda, and also Kleine and his collaborators in German East Africa, have proved conclusively that *G. palpalis* is a true host of *T. gambiense*—that is to say, one in which a definite cyclical development of the parasites is undergone. This development takes a period of at least twenty days from the time when the fly fed on infective blood; and after this interval has elapsed a fly may become permanently infective—in other words, liable to produce the disease in any human being or susceptible animal on which it feeds. It is quite likely, moreover, that a fly, once infective, remains infective for the rest of its life; the amount of harm which may be wrought by a single infective tsetse fly is therefore sufficiently obvious. On the other hand, all the evidence obtained up till now is against the transmission of the parasite from the fly to its progeny. Further, the British Commission found that only a small proportion—about 5 per cent.—of the experimental flies become successfully infected in the first place, and considers that the proportion of infective to non-infective flies occurring wild in nature must be very much smaller.

By a convincing series of experiments the members of the British Commission have shown that both wild game, such as the antelope, and also certain domestic animals—for example, cattle—are capable of harbouring the parasite of sleeping sickness, and that flies may become infected from such animals and subsequently transmit the disease to healthy ones. Up to the present, however, it has not been proved that this potential reservoir actually exists—that the antelope, for instance, is naturally infected in any district, and thus a material source of the trypanosomes for wild flies. Two or three facts were ascertained, however, which are highly suggestive in this connexion. In the antelope the parasites were very scarce and difficult to find by microscopical examination of the blood, even when the animal was proved by experiment to be infective for flies. Infected antelope might remain for some time in apparently good health, notwithstanding the fact that they were being kept in the confined surroundings of a laboratory. In a quite recent communication Fraser and Duke have stated that an antelope remained infective for flies 315 days after it had been infected, and the animal itself was alive at the end of a year. Hence the infection produced in antelope by *T. gambiense* appears to be of the chronic type, and, for all that is known to the contrary, may be of a similar character to the infection of wild game by *T. brucei*. It seems quite likely, therefore, that the wild game may act as a reservoir for the parasite of sleeping sickness, but with the difference in this case that it is to be regarded only as a secondary source, man himself being the primary and principal source of the trypanosomes. Another important fact ascertained by the Commission was that tsetse flies from the lake shore remained infective and capable of giving rise to the disease in experimental animals, although three years had elapsed since the removal of the native population and domestic animals from the zone. It is still uncertain, however, to what extent these infective flies can be considered as having derived their parasites from a wild game reservoir. For one thing, it is doubtful whether it can be safely assumed that no "leakage" has occurred. If infected natives had passed through this zone, though only occasionally, the number of infective flies would probably have become thereby replenished. Again, it is not yet known how long a tsetse fly can live. Flies have been maintained for several months in captivity, and Bruce has suggested that they may perhaps be able to live for two or three years in their own haunts. Hence there is also the possibility that the flies from the lake shore which were found to be infective had been infected before the natives and domestic animals were all removed.

It is now known that *G. palpalis* is not the only tsetse fly which, under suitable conditions, can act as a true host for the parasites of sleeping sickness. Taute, working on the shore of Lake Tanganyika, has lately shown that *G. morsitans* may also become permanently infected with this trypanosome. In the case of this host the necessary period which must elapse before the essential propagative forms are developed is apparently twenty-one days, being thus about the same in this species as in *G. palpalis*. The investigation furnished positive results in a sufficient number of cases for Taute to conclude that the transmission of *T. gambiense* by *G. morsitans* is not to be regarded merely as an exceptional occurrence. Taute's observations may prove to be of considerable epidemiological significance, particularly as there are now good reasons for thinking that *G. morsitans* does convey sleeping sickness in certain districts. During the last couple of years or so a number of cases have been recorded from Nyasaland and North-East Rhodesia, which in many instances certainly have been contracted in areas where no *G. palpalis* can be found, but where *G. morsitans* and other species are of frequent occurrence. The trypanosome in these Rhodesian cases, it may be mentioned, appears to be a distinct strain or race of parasite, to which the name *T. rhodesiense* has been given. For the present it is, perhaps, best regarded as a new variety—it may be of *T. gambiense*, or it may be of *T. brucei*. *G. morsitans* and *G. fusca*, among other forms, have been for some time incriminated as possible "carriers," and recently the actual transmission of the parasite by means of the former species has been obtained by Kinghorn. Hence in all probability *G. morsitans* is the natural transmissive agent of this new strain.

It will be apparent from the foregoing summary that the tsetse-fly danger is proving much more formidable than was once considered likely. It is no

longer a question of *G. palpalis* only; and it would be indeed rash to assume that the power of infecting man is restricted to the two species, *palpalis* and *morsitans*. The great importance of Taute's work is that it tends to show that the "specific relation" between a particular trypanosome and a particular tsetse fly may be largely a matter of climatic conditions and the associated biology of the fly. It cannot be considered at all improbable that in districts where no *G. palpalis* is to be found this fly may be represented, as it were, by another species whose habits and environment are such that it could act as a host for *T. gambiense* if the parasite were to be introduced into its zone. All the indications of recent research point unhesitatingly to the conclusion that the urgent problem of the immediate future is how to get rid of the tsetse flies. Their complete extermination is perhaps too much to hope for yet awhile, but no efforts should be spared to bring about their disappearance from the vicinity of human settlements and pathways of communication. In a recent article R. W. Jack has described some interesting observations on the breeding haunts of *G. morsitans*—that is, the kind of position usually chosen by the fly for the deposition of its puparia—and he is of the opinion that the instinct of the flies is to avoid places where the puparia would be in danger of destruction from the scratching of game birds (such as guinea-fowl, francolins, etc.). Observations such as these on the bionomics of the flies may be of great practical value as indicating additional methods of combating the pests and helping to reduce their numbers.

EPIDEMIC POLIOMYELITIS.

THE Local Government Board in England has issued in a small Blue Book an interesting series of reports and papers on epidemic poliomyelitis[1] in Devon and Cornwall in 1911, and in the Midlands and Dorsetshire in 1910. In a prefatory letter Dr. Newsholme points out that the occasional appearance of small groups of cases has been recognized for some years past, and that the suspicion that these cases have formed part of a much more considerable and widely spread local prevalence has been confirmed by the fact that the disease manifests itself in very different forms, so that its true nature may easily pass unrecognized. Both Dr. Reece, who made the local investigations in Cornwall and Devonshire, and Dr. Farrar, who made those in the Midlands and Dorset, state that abortive cases in which little or no paralysis resulted were detected in considerable numbers, and Dr. Newsholme thinks that it may be reasonably conjectured that such cases play an important part in the dissemination of the virus. In this connexion he calls particular attention to an outbreak of illness associated in only one or two instances with paralysis, which affected nearly every house in a Devonshire hamlet last autumn. If the illness in this case was true poliomyelitis. it was, he points out, "at once extremely infectious, and so slight in its manifestations as hardly to be recognizable." Moreover, both Dr. Reece and Dr. Farrar came across circumstantial evidence that infection can be conveyed by an apparently healthy carrier, as has been suspected in some epidemics abroad. The local health authorities in Devon and Cornwall seem to have shown a lamentable lack of firmness in dealing with the outbreaks, and some of the statements put forth on their behalf may be called disingenuous. The medical men, especially, perhaps, those engaged in the public health service, displayed much courage both physical and moral, and in some instances at least were not very generously treated by the local authorities. In one case in the Bideford Rural District, which has no isolation provision, accommodation could not be found for a nurse who was taken ill while attending a confinement; nobody would let an empty cottage; her landlady refused to have her back, and, finally, "the medical attendant, in the face of adverse criticism, and to his great credit, took the nurse into his own house, isolated her as far as possible, and engaged a nurse to attend her." Of the isolation hospital of the Urban and Rural District Councils of Holsworthy, Devon photographs are given, showing it to be a small thatched cottage, without furniture, and with water standing several inches deep on the floor of the back room. Yet the Clerk seems to have felt justified in writing in the local press: "Your information as to a hospital is also at fault. There is an isolation hospital at Holsworthy." The volume contains a review by Dr. Hugh A. Macewen on the literature bearing on the clinical character and epidemiology of the disease drawn chiefly from Sweden, the United States, and other countries in which extensive epidemics have occurred, and two reports by Dr. Mervyn Gordon. The first of these is a critical review of the experimental researches on the virus of poliomyelitis, including those bearing on immunity, with an account of the histology of the disease. The second is a preliminary report of the results of his examination of pathological material, including cerebro-spinal fluid from numerous cases, and the spinal cord from four cases. The characteristics of the fluid were consistent with a diagnosis of poliomyelitis and in no case with that of cerebro-spinal fever, and the histological examination of the spinal cords revealed typical lesions of poliomyelitis. Material from two of the cases forwarded by Dr. Gordon to Professor Levaditi of the Pasteur Institute in Paris was there found to produce typical acute poliomyelitis on inoculation into monkeys.

[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series, No. 61, to be obtained through any bookseller, price 3s.

A PRACTICAL ROYAL COMMISSION.

THE Report of the Royal Commission on Tuberculosis for the Province of Quebec, just issued, gives a clear and practical presentation of the procedure for the prevention and eradication of tuberculosis. The report is excellently arranged. The first six pages are devoted to the most important conclusions arrived at by the Commissioners, and the last part contains a more minute study of the subject, reporting the evidence in detail. In the Province of Quebec the mortality from tuberculosis is higher than in the Province of Ontario and in the United States, and it is a striking fact that the death-rate from this disease is as high in the rural as in the urban districts. The Commission found that the majority of deaths from tuberculosis occur among women, and the death-rate among French Canadians is higher than among Anglo-Canadians. The Commissioners premise that tuberculosis is infectious and transmissible, and that it can be prevented, just as other infectious diseases have been prevented. Attention is specially directed to the significance of overcrowding in dwellings and other places where large numbers of people are brought into contact, such as schools, offices, and workshops. The report divides the measures to be taken against tuberculosis into two distinct groups: *those which can be carried out at once* and *those which can be carried out gradually*. Among the measures to be carried out at once are stricter observance of the public health laws, education of the general public regarding tuberculosis, teaching of the principles of hygiene in schools, medical inspection of schools and workshops, the establishment of tuberculosis dispensaries, isolation hospitals for advanced cases, and open-air schools; and legislative enactments regarding alcoholism, premature employment of children, inspection of milk, etc. Among measures to be carried out gradually are included the creation of sanatoriums, farm colonies, and holiday colonies, and legislation to

enforce the building of cheap and healthy houses for the working classes, and general improvement of hygienic conditions throughout the province. The report submits recommendations to the Lieutenant-Governor in Council as to the part the Government should take in the tuberculosis campaign. These recommendations are founded on the evidence given in the report, and on the plan followed by New York City in combating tuberculosis, and the Edinburgh scheme for the prevention of consumption. An account of these methods and of the present condition of the campaign against tuberculosis in the various provinces of Canada, is given in the appendices. Because of their great significance in the issue now before this country, we may quote the first five of the recommendations made to the Lieutenant-Governor, in the words of the Report. "(1) That very explicit instructions be given to the Provincial Board of Health, to municipalities, and other duly constituted authorities to enforce the regulations respecting the compulsory notification of tuberculosis, the disinfection of contaminated premises, the healthy condition of dwellings, schools, and industrial establishments; and that such authorities be actively assisted by the law officers when compelled to enforce such regulations. (2) That the Provincial Board of Health be the central authority which will direct the application of the means of combating tuberculosis, and, to that end, that it be given a sufficient appropriation to establish a special department for tuberculosis with the necessary staff. That department should be under the direction of a *physician of acknowledged competence in the matter*,[1] who would apply all the educational means mentioned in the Report, inspect the antituberculosis institutions, and strive to have others established to complete the antituberculosis armament, compile statistics, and submit a yearly report on his administration and on the results of the campaign against tuberculosis. (3) That in every municipality or union of municipalities, where there is a chartered antituberculosis association, the Government, on a favourable report of the Provincial Board of Health, contribute a proportionate amount (to be determined) towards the cost and maintenance of every established dispensary, and empower the municipalities served by such dispensaries to contribute an equal amount towards their erection and maintenance. (4) That the Government contribute a proportionate amount (to be determined) towards the establishment of isolation hospitals or the construction of special pavilions in existing hospitals, receiving advanced cases of tuberculosis among the poor, and empower the municipalities served by such isolation hospitals or pavilions to contribute to their erection and maintenance. (5) That the Government contribute a certain amount (to be determined) towards the maintenance of advanced cases of tuberculosis among the poor, in special hospitals or pavilions, by distributing that amount "pro rata" at so much per head and per week, and empower municipalities also to contribute in the same manner to the same object." The medical members of the Royal Commission included Dr. E. P. Lachapelle (Chairman), Dr. T. G. Roddick, and Professor J. G. Adami; and among the lay members was Colonel Jeffrey H. Burland, the donor to Montreal of the Royal Edward Institute for Tuberculosis.

MILK AND CREAM PRESERVATIVES.

A RECENT report[2] to the Local Government Board in England by Dr. G. W. Monier-Williams on analyses and methods of detection of certain proprietary substances sold as preservatives for milk, cream, etc., is chiefly concerned with a new preservative sold under the name of Mystin. Extracts are given from a trade circular in which it is stated that public analysts had certified that mystin does not contain formalin, borax, boric acid, hydrogen peroxide, benzoic acid, salicylic acid, and that it is free from preservatives of any kind. A further quotation from the circular is to the following effect: "It must be clearly understood that mystin, unlike so many preparations, is not merely one of the familiar chemicals under a new name, but is a preservative previously unknown to science, only discovered after a lengthy period of close research work by our chemist. Mystin is absolutely non-injurious. We have absolutely assured ourselves by a variety of methods, among them the daily drinking of a quart of milk treated with the preparation, that it is entirely harmless . . . whilst the fact that . . . its presence cannot be detected by analysis proves that it contains none of the injurious chemicals in ordinary use as preservatives." Analysis showed that mystin contained 9.85 per cent. sodium nitrite and 0.30 per cent. of formaldehyde in water. Dr. Monier-Williams calculates that a quart of milk treated with the preservative in the proportion directed would contain 2 grains of sodium nitrite, the maximum pharmacopoeial dose of this substance, and upon this he remarks: "Sodium nitrite is a dangerous drug, with a powerful action on the heart, and should not be taken except under medical supervision. Apart from the possibly injurious action of the formaldehyde, it is clear that the consumption of milk containing the maximum medicinal dose of sodium nitrite in one quart is fraught with considerable danger to health, which would be accentuated in the case of children or invalids." The formaldehyde was estimated by Feder's reaction. The reason for the presence of such a large excess of sodium nitrite—not itself a preservative—was not at first evident, but it was found that milk treated with mystin in the proportion directed did not give Hehner's reaction, which is that most generally relied on by analysts for the detection of formaldehyde in milk, so that in the ordinary routine examination of milk samples for preservatives such a sample might be passed as genuine. The results of the analysis of another preservative sold under the name of Accoine is also given. It is claimed for this preservative also that it could not be detected by analysis; it was found to contain 13.97 per cent. sodium benzoate and 1.94 per cent. of sodium carbonate in water. Another substance advertised as a preservative for margarine was found to consist almost entirely of sodium fluoride, and yet another recommended as a cream preservative was found to contain sulphite, and probably consisted of a mixture of sodium metabisulphite and sodium sulphite.

EFFICIENCY IN VENTILATION.

ANY devotees of the open-window cult who were present at the meeting of the Society of Arts on February 7th must have experienced keen satisfaction on finding their position so well defended in the paper on "Ozone in Ventilation," read by Drs. Leonard Hill and Martin Flack. Speaking for his colleague and himself, Dr. Hill brushed aside the idea, which is fostered by little books on hygiene, that the good results of efficient ventilation are due to the chemical purity of the air. They are due really to the movement, coolness, and relative humidity of the air, and to the ceaseless variations of these qualities. It is commonly supposed that a slightly increased percentage of CO_2 acts as a poison, but Dr. Hill pointed out that whatever the percentage of CO_2 in the atmosphere might be, the breathing mechanism was so arranged that the CO_2 in the pulmonary air was kept constant at about 5 per cent. of an atmosphere. Moreover, the rebreathing of expired air was to some extent inevitable. The child at the breast, the chicken under the wing, the pig in the sty, all breathed a far higher percentage of CO_2 than was allowed in factories by the Home Office. Another factor in the chemical purity of the air was the concentration of

[1] The italics are in the original Report.
[2] Report to the Local Government Board, by Dr. G. W. Monier-Williams, on Analysis and Methods of Detection of Certain Proprietary Substances sold as Preservatives for Milk, Cream, etc. London: Wyman and Sons, Ltd. (Food Reports No. 17. Price 2d.)

oxygen, but Dr. Hill affirmed that even in the worst ventilated building the oxygen was never lessened by more than 1 per cent. of an atmosphere, and only when it was brought down below a pressure of from 14 to 15 per cent. of an atmosphere did signs of oxygen want make their appearance. Again, it was asserted that an organic chemical poison existed in the exhaled breath, and for the speaker's scepticism respecting this, in a paper read before the British Association, he was taken to task by a London daily paper, which said, in effect, "It is all very well for Dr. Hill to talk. We know by the evil smell of overcrowded rooms that there must be organic poison." But that was not enough. The scientific man wanted absolute evidence, and offensive smell did not prove the existence of poison. The smell of dead meat might be loathsome to a poet, but the slaughterer throve in it, and similarly in other kinds of stench did the people who worked in glue factories, fried fish shops, and sewers. In an experiment in which eight students were imprisoned in a small chamber holding about 3 cubic metres of air, and kept there until the CO_2 reached from 3 to 4 per cent., and the oxygen had fallen to 17 or 16 per cent., the wet bulb temperature rose to about 85° F., and although the discomfort was severe it was relieved to an astonishing extent by whirling the air with electric fans and so cooling the bodies of the prisoners, and the relief was greater still when cold water was allowed to circulate through a radiator. The discomfort was clearly shown to be due, not to chemical impurities, but to excessive heat and humidity. Dr. Hill considered that the open fire and the open window, by bringing in the cool air and keeping the air moving, had everything to recommend them, and he deplored the fact that warm, windless air, so likely to lessen the individual's immunity to bacterial infection, was common in places of business and amusement. In the House of Commons the air was maintained at the "deadly uniformity" of 63°, although he found, on making an examination, that on the floor beneath the seats occupied by some of the front bench men there were trap-doors by means of which a little variation in the air-current introduced into the neighbourhood of these favoured senators could be obtained as desired. The speaker said that he would have extended this touching attention, and, in another sense than the one intended by Guy Fawkes, have blown up the chamber. Ozone in ventilation, which figured in the authors' title but not largely in their text, has, in their opinion, already effected a great improvement in the air of the Central London Railway. In harmful concentrations it quickly gives a danger signal, and a man cannot be poisoned unawares. It is a powerful deodorizer, and will quickly sweep away disagreeable smells, whether by destroying them or by preventing the nose from smelling them was of little consequence. When in such weak concentrations as are used for the purpose of ventilation its beneficial effect on the olfactory nerves and on those of the skin and respiratory tract is the essential justification for its introduction.

ALCOHOL, ADOLESCENCE, AND BUSINESS LIFE.

CIVIC hospitality is popularly associated with brimming bumpers. Yet only last week a representative gathering of influential business men accepted the invitation of Sir Thomas B. Crosby, the Lord Mayor, to hear Sir Thomas Barlow, President of the College of Physicians, and Sir Thomas Clouston, ex-President of the Edinburgh College of Physicians, speak on the relationship of alcohol to adolescence and business life. During the Lord Mayoralty of an abstainer like Sir Vezey Strong such a gathering would have been less remarkable; for the present Lord Mayor is a hale octogenarian and a moderate drinker. But Sir Thomas Crosby, as a medical man, has, doubtless, in his long and useful life, seen enough of the havoc wrought by intemperance to lend the influence of his high position to any effort to promote the welfare of those who are at once the heart and brain as well as the backbone of England's commerce. Sir Thomas Barlow believes that young men entering on a business career slip into the habit of taking stimulants, unconscious of their danger. As Sir Thomas Clouston put it, young men fell into the drink habit through sheer want of knowledge; and he added that no man "should take alcohol till his beard has grown, and after it has grown he should refrain from drinking till he is twenty-five, and be precious careful about taking it afterwards." To few members of the community can the authoritative pronouncements of Sir Thomas Barlow and Sir Thomas Clouston be more useful than to business men, and particularly to commercial travellers. The death-rate of commercial travellers from alcoholism is excessive. Indeed, a man must have a firm will to stand aloof from the convivial customs which have obtained in the inns and hotels in which he stays when on the road. In many towns good temperance hotels do not exist, and the traveller has been compelled to live, and too often transact business, in an alcoholic environment. He has, in consequence, lost more than he has gained. The business acumen of the Jew is as conspicuous as his sobriety, and Gentile traders might do worse than ask themselves how far the one is the consequence of and dependent upon the other.

THE JOHANNESBURG SEWAGE FARM.

THE sewage of Johannesburg, where there is a population approaching 200,000 persons, is dealt with mainly by irrigation on a sewage farm 2,642 acres in extent, situated some 9 miles from Johannesburg. There is a belt 600 ft. wide between the irrigable area and the lower boundary of the farm to prevent pollution of water-courses. The farm was first irrigated with sewage in November, 1907, but in March of the following year complaints were made of smell nuisances from it, and in 1909 an action for damages was instituted against the Johannesburg Municipality, and was heard before Mr. Justice Bristowe, in the High Court. An interdict was granted against the farm, which was suspended for nine months to enable the defendants to take steps to improve the arrangements. A joint report on the future management of the farm was then presented by the medical officer of health, Dr. Charles Porter, and the town engineer. They made certain recommendations which were adopted by the municipality, and the result of a second action for damages against the municipality, which was tried before Mr. Justice Bristowe in December, 1911, goes to show that the farm is now conducted on proper lines, and is not a nuisance. The principal evidence of the plaintiff, a market gardener, in the last action, was that of himself and his wife, who said that the smells from the farm woke them up at night and made them vomit. There was, however, no medical evidence called to show that either of them was ill. Indeed, the wife frankly said she did not believe in South African doctors. That, said Mr. Justice Bristowe, might be quite satisfactory to her, but not to the court, because the court did believe in South African doctors. The ultimate decision of the court was that although there was evidence to show that a smell existed in the neighbourhood of the farm occasionally, yet it was not sufficiently pronounced or sufficiently continuous to constitute a nuisance.

A HOSPITAL SHIP FOR THE ROYAL NAVY.

As will be seen from the statement made by Director-General Sir James Porter, K.C.B., R.N., at the dinner of the West London Medico-Chirurgical Society, the Admiralty is considering tenders in respect of a contract for the supply of a specially designed hospital ship for the

royal navy, which it is intended should be ready in May, 1913. She will be a vessel of 5,000 tons, turbine propelled, and having a speed of between twelve and fifteen knots. She will be, we believe, the first ship specially constructed for this purpose by any nation. In addition to general wards, she will have isolation wards to deal simultaneously with three or four types of infectious disease. Patients will be transferred from the wards by electric lifts to two operating theatres with preparation rooms attached, the whole heated throughout by radiators. There will be a laboratory and bacteriological room, an ophthalmic room, a dental room, a padded room, ample bath accommodation, a steam laundry with disinfector, an incinerator for soiled dressings, and a mortuary. There will be special cooking arrangements for the sick, and cold storage will be provided. The boat will be fitted with an internal telephone system, and will have a wireless telegraph installation. She will carry a number of boats, motor and others, for the transference of sick and wounded. The medical staff in peace will consist of four medical officers and twenty-nine sick-berth men; in war the staff will be nine medical officers and forty-seven sick-berth men. Cooks are not included in this number.

LECTURES AT THE ROYAL COLLEGE OF SURGEONS.

PROFESSOR ARTHUR KEITH, Curator of the Museum, will begin a course of six lectures at the Royal College of Surgeons of England, on important phases in the evolution of man, on Monday, February 26th. On Friday, March 15th, Professor W. Girling Ball will give a lecture on streptococcus infection, with special reference to the value of vaccines and serums; on March 18th Professor J. W. H. Eyre will lecture on the pathology and diagnosis of tuberculosis of the conjunctiva; on March 20th and 22nd two lectures on the mechanism and treatment of shock will be given by Dr. L. G. Parsons and Mr. H. Tyrrell Gray respectively; and on March 25th Dr. Edward Fawcett will lecture on the development of the human chondro-cranium and various cranial bones.

A MEETING of the supporters of the London School of Tropical Medicine will be held at the Mansion House under the presidency of the Lord Mayor on Wednesday, February 28th, at 3 p.m. Mr. Lewis Harcourt will be among the speakers.

WE are informed that Surgeon-General Bannerman of the Madras Presidency has telegraphed to Professor Sir Ronald Ross, Liverpool School of Tropical Medicine, that Captain Patton of the Indian Medical Service has discovered the complete development of the parasite of kala-azar in Indian and European bed-bugs.

SIR THOMAS BARLOW, President of the Royal College of Physicians of London, and Mr. Rickman J. Godlee, President of the Royal College of Surgeons of England, were entertained by their colleagues, old students, and former pupils at a dinner at the Hotel Cecil, London, on February 8th. The chair was taken by Sir John Tweedy, and about 150 persons were present. The toast of the evening—"Our Guests"—proposed by the Chairman, was suitably responded to by Sir Thomas Barlow and Mr. Godlee. The health of the Chairman was proposed by Professor G. D. Thane.

A CINEMATOGRAPH display of bacterial processes will be given in the out-patient hall of Charing Cross Hospital on Tuesday, February 27th, at 5 p.m., to which all students and medical men are invited. Those desirous of being present are requested to communicate with Mr. Kenneth V. Smith, secretary of the Charing Cross Hospital Medical Society.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The King's Speech.—The King's Speech did not contain any definite promise of legislation directly affecting medical matters, although there is a promise of legislation to deal with certain social and industrial reforms.

The Debate on the Address in the House of Commons on Wednesday, after the speeches of the mover and seconder, was confined to speeches by the two leaders. Mr. Bonar Law, after reminding the House that the Opposition had moved an amendment pointing out that the bill ought to be postponed because, it had not been properly considered by Parliament, accused the Government of using the whole party machinery to explain to the country a measure, not before but after it had become law. He said that he had been informed that while the Liberal Insurance Committee was masquerading under the name of the National Insurance Committee public money was spent on propaganda. He asked whether any of the meetings carried out by the organization were so paid for. He criticized the speech of the Chancellor of the Exchequer at the London Opera House, saying that, as blandishment was of no more use, the doctors were now to be brought to heel by threats. Mr. Bonar Law concluded his reference to the subject by expressing the belief that though the Act had become law it would never come into operation. Mr. Asquith, towards the conclusion of his reply, said that no legislative measure of the time had been exposed to such misrepresentation as the National Insurance Act. The results of recent by-elections had been attributed to the unpopularity of the Act, and it was therefore high time that steps should be taken to counteract the misrepresentations which were made by the opposite party, and explain to the people what the Insurance Act really meant. He asked Mr. Bonar Law what he meant by saying that the Act would never come into operation. How was that to be prevented? Was the right hon. gentleman, if and when he came into power, going to repeal it? To this challenge Mr. Bonar Law replied, "Certainly," a declaration received with cheers and counter-cheers. Mr. Asquith retorted that he was glad to establish the fact that the first plank in the new platform of the Tory party was the repeal of the Insurance Act. He indignantly repudiated the suggestion that public money, meaning by that money from the public exchequer, had been expended for the purpose of agitation or meetings in connexion with the measure. Mr. Bonar Law explained that it had occurred to him that, since it was an Act, the Government might have considered that it was in the interests of the country that public money should be so expended. Mr. Asquith emphatically stated that not one halfpenny of public money had been or would be so spent. He then challenged Mr. Bonar Law to repeat in the House of Commons the charge that the Government had created offices with the intention, which they had carried out in fact, of putting into those offices as a reward of political services their own political partisans. There was not a scintilla of justification for such a charge. The two speeches produced a good deal of excitement, but the House adjourned early. Mr. Bonar Law has published a letter in which he denies that he undertook on behalf of his party, without qualification, to repeal the Insurance Act, and continues:

> That was not my meaning. My understanding of the Prime Minister's question was: "If you come into power now, will you repeal the Insurance Act?" and my answer was, "Certainly."
>
> If the Opposition had the opportunity of dealing with the subject of insurance at once, the repeal of the present Act would be necessary in order that a thorough reconsideration of its provisions might be made. But it is, I should have supposed, evident that if the Act were actually in operation, or if serious commitments had been made in anticipation by bodies interested, the subject could only be dealt with by drastic amendments of the existing Act.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

ASSOCIATION OF FELLOWS OF ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE annual dinner of the Association of Fellows of the Royal College of Surgeons in Ireland was held on February 3rd in the Dolphin Hotel. Lieutenant-Colonel Adye-Curran, F.R.C.S.I., President of the Association, presided. Mr. Frederick Spicer, F.R.C.S.I., the Representative of the Association and Secretary in London, proposed the toast of "The Association." Its object, he said, was to promote the interests and welfare of the Fellows. The existence of such an association ought to cause every Fellow of the College to flock into its ranks, and it was only ignorance or inability to appreciate the objects of the Association which prevented more of the Fellows from becoming members. He would therefore urge the Council to make more extensive and bolder exertions in the way of advertising amongst the Fellows of the College these objects. The exception that might be taken to their original founders could not count with many. There seemed to be a fear that they were a discontented lot, ready to pull down everything in order to get something out of the ruins for themselves. This was, however, an unjust and unreasonable accusation. Let them examine the College from any standpoint, and they would have to admit that things were not exactly what they might be. Financially her state was rotten, and the professors were underpaid. She was insulted and flouted by England, as her Fellows, however eminent they might be, were not even eligible for many surgical appointments in that country. He therefore appealed to the members in Ireland to wake up and act at once. They should unite and bring pressure to bear on their parliamentary representatives, in order to get their aid in obtaining some of that enormous amount of wealth which was spent in education in this country. The Chairman, in proposing the toast of "Our Guests," said that the primary object of the Association was to assist their College and by mutual help further the welfare of its Fellows in whatever country they might be. They had already achieved much. The most important medical topic at present was the Insurance Act, but he would only express the hope that the Government might see their way to introduce during the coming session some sort of an amending bill which would render it more acceptable to the profession at large.

NATIONAL INSURANCE ACT.

The Conjoint Committee of the British Medical Association and the Irish Medical Association have issued a letter to the medical practitioners of Ireland, saying that though the Act comes into force on July 15th no work will be required of the profession until next January, and then only the signing of certificates. But the question of remuneration for these requires careful consideration. Owing to the elimination of medical benefits there is outside the Act a great danger of a widespread and immediate introduction of contract practice absolutely under the control of friendly societies with enormously increased memberships. After a time, approved societies which have accumulated sufficient funds may introduce medical benefit as an additional benefit, which may be administered under the same conditions as medical benefit in Great Britain, but the Irish Commissioners have power to leave the administration in the hands of the friendly societies, which would of course be directly opposed to the interests of the profession. They therefore warn the doctors not to make any arrangements for the present with the friendly societies without first communicating with the Conjoint Committee. They also ask for particulars of any extension of contract practice, and they draw attention to the fact that the profession in Ireland has no voice in the selection of the medical men who are to serve on the Insurance Committees, as is conceded in Great Britain. The letter concludes with the suggestion that arrangements should now be made to have a local Medical Committee formed in the district of each Insurance Committee.

A notice appeared recently in the daily papers to the effect that the Irish Commissioners are prepared to receive applications from friendly societies, trade unions, public bodies, or other bodies who desire to become approved societies under the Act, for the service of lecturers on the National Health Insurance Act. The duty of the lecturers is to explain the Act, and not to advocate any particular system of insurance or provision against sickness; they will answer questions or submit the same for answers to the Irish Commissioners. The service of the lecturers is to be given free, they will not be allowed to attend political or other meetings of a controversial nature, though they will be allowed to explain the Act to all bodies, political, religious, social, or otherwise. It is also proposed to form classes in Dublin and Belfast, and other large centres, where officials of existing organizations may receive special instruction.

Speaking at the annual meeting of the Drogheda Chamber of Commerce last week, the President said that the most important matter that had come before them that year was the National Insurance Bill. He hoped that when amendments had been made in the course of time in the Insurance Act they would see the whole dispensary and outdoor relief and Poor Law system remodelled on some uniform basis, and so amalgamated that they would provide one economic, uniform system of administering relief to necessitous persons.

COUNTY CLARE SANATORIUM JOINT COMMITTEE.

Last week the first meeting of the Committee of Management of the new County Clare Sanatorium, which is now almost complete, was held in the judge's room at the Ennis County Court house. Lady Inchiquin presided. After some discussion as to the advisability of obtaining local as well as outside estimates for equipment, lighting, etc., it was decided to delegate the purchase of these to a subcommittee. The subcommittee appointed to select a suitable matron reported that they had selected Nurse McKeough, who is to have a special course of training at the Allan Ryan Home Hospital. It was finally decided that April 15th should be provisionally chosen for the formal opening of the sanatorium.

BALLINROBE GUARDIANS AND THEIR MEDICAL OFFICERS.

At a special meeting on February 5th the Ballinrobe Board of Guardians had under consideration an application from the five medical officers of the union for the adoption of a graded scale of salaries. The medical officers stated that their combined salaries amounted to £530, out of which only £50 was paid by the rates. The present salaries were fixed about sixty years ago, when £100 was practically equal to £200 at the present day, and had never been increased since. The scale they suggested was one which created an initial salary of £125 per annum for each medical officer, with triennial increments of £7 10s. to a maximum of £200, these increments to be retrospective in the case of the present medical officers. The cost of this scheme would amount, with the present staff, to only 1½d. in the £. The guardians admitted that the doctors were entitled to an increase in their salaries, but the ratepayers were opposed to increases. The clerk was directed to ascertain if the Local Government Board would recoup the half of any increase that was given, and in the meantime the application was adjourned, the guardians stating that they would be unanimous in allowing an increase of £20 to each medical officer should the Local Government Board refund half the amount.

CHARGE AGAINST AN "INMATE NURSE."

At the last meeting of the South Dublin Board of Guardians the report of the committee appointed to investigate the complaint about the removal of a patient to the workhouse infirmary was read. It contained a recommendation that the Local Government Board should be asked to hold a sworn inquiry into the matter, and also another recommendation by the chairman of the board suggesting that the officials implicated in the case should be severely reprimanded, on the ground of the delay they had caused in bringing the patient to the workhouse. The report also advised that in future a ward mistress should accompany the workhouse cab in all cases where the removal of female patients was concerned. It was decided not to ask for a sworn inquiry, but that the guardians themselves should deal with the matter by reprimanding the officials who were implicated. There has been no explanation offered so far of the term "inmate nurse."

MEDICAL INSPECTION OF SCHOOL CHILDREN.

At a meeting of the Dublin School Managers' Association (Church of Ireland), held last week, it was proposed that:

> In view of the physical defects which are so largely to be found among the children, it is of importance that some form of medical supervision should be organized. This work belongs properly to the public health authorities, and it is impossible for school managers to make provision for this medical inspection in addition to the expenses for which they are already responsible.

ILL-EFFECTS OF USE OF SALT IN THE REMOVAL OF SNOW.

The Dublin Sanitary Association have issued a warning to the sanitary authorities and public in general that the practice of removing snow by scattering salt upon it is eminently insanitary, and prejudicial to health. The addition of salt to snow makes a freezing mixture, which chills the feet, rots the shoe-leather, and damages horses. The council of the association, therefore, advises the early removal of snow by scraping and sweeping of the pavements, with a subsequent sprinkling of the surface with sawdust, fine gravel, or sand.

HEAVY FINE FOR MILK ADULTERATION.

In the Southern Police Court, Dublin, last week, Mrs. Mary Farrell, 112, Francis Street, was prosecuted by Inspector O'Brien of the Dublin Corporation for having sold him milk which had been adulterated with 41 per cent. of water. The facts were admitted, and the excuse offered was that Mrs. Farrell was an old lady and unable to look after the business. She had been already convicted five times. The magistrate said if he had the means of dealing with whoever was responsible for this he would send the person to gaol. The doctor, however, had certified that this woman was ill, and he supposed he could not send her there. But he would fine her £25.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

GLASGOW WESTERN INFIRMARY RESIDENTS' CLUB.

THE seventeenth annual dinner of this club was held in the Grosvenor Restaurant, Gordon Street, Glasgow, on February 9th, when seventy-five old residents sat down to dinner under the chairmanship of Dr. J. Middlemass Hunt of Liverpool. Amongst others present were Drs. Geo. Middleton, J. H. Nicoll, Clarke (Dumfries), Marshall (Rothesay), J. Goff (Bothwell), Captain Gourlay, I.M.S., and Dr. A. Connal (Southern Nigeria). After the loyal toasts the Chairman proposed the toast of "The Club" in a delightfully reminiscent speech. Dr. W. R. Sewell (Helensburgh) gave the toast of "The Old Institution." He mentioned that when he was indoor assistant in 1875 there were only six residents. As showing what changes have taken place, it may be mentioned that there are at present fifteen resident assistants. Dr. James Parker gave the toast of "Absent Friends." The guests of the club were Dr. J. Crawford Renton and Dr. D. Macartney, who was recently promoted to wards in the Western Infirmary. Dr. James Parker (Kilmacolm) was elected chairman for next year. The menu card for the dinner was designed by Dr. A. MacPhail of Charing Cross Hospital Medical School. The secretary (Dr. James Galbraith Connal, 7, Somerset Place, Glasgow) would be obliged if members would intimate any change of address.

PARISH COUNCILS AND THE LUNACY BILL.

A conference of representatives of parish councils in Scotland was held in Glasgow on February 9th, 100 representatives being present, to consider the Lunacy (Scotland) Bill and other relative Acts. At present the District Lunacy Boards are elected by members from the county councils, but the parish councils provide the whole cost of maintenance for the institutions while the county councils provide only for the upkeep of the buildings. A motion submitted to the conference in favour of representation of parish councils on these boards was adopted unanimously. Discussion also arose on the provisions of Clause 8 of the bill, which provides for the certification of lunatics by one medical man, and it was agreed to petition in favour of the system of having all lunatics certified by two medical practitioners as at present. The question of the treatment of patients in mental observation wards was afterwards discussed. It was pointed out that while this class cost from half to double more than the ordinary patient in the lunatic asylum, it was most desirable that such treatment should be provided, and that the Government should allow such expenditure to rank and participate in the parliamentary grant allowed for lunatic patients, particularly on the ground that this treatment was more conducive to an early recovery than asylum treatment, and that the stigma of being a certified lunatic was not imposed on the patient. The question of dealing with epileptics and inebriates was also under consideration, and a remit with powers was made to an executive committee.

CONFERENCE ON HOUSING AND TOWN PLANNING.

Circulars have been issued to local authorities in Scotland regarding the Scottish National Conference on Housing and Town Planning Administration which will be held in Glasgow on March 21st and 22nd. Much of the time of the conference will be devoted to the explanation of the new town planning powers and housing powers under the Act of 1909. The conference will probably be attended by nearly 300 delegates. Sir Thomas Hunter, the Town Clerk of Edinburgh, will preside, and among these who will deal with certain aspects of the subjects to be discussed will be Mr. John Lindsay, Town Clerk Depute, Glasgow; Dr. A. K. Chalmers, M.O.H. for Glasgow; Councillor Dr. Walsh, Dundee; Dr. Williamson, M.O.H. Edinburgh; Councillor Shawcross, Rochdale; Councillor Wilkins, Derby; and Mr. Raymond Unwin, Member of the English Advisory Town Planning Committee.

MEDICAL OFFICERSHIP OF STIRLINGSHIRE.

A special meeting of Stirling County Council was held in Stirling on February 9th to consider the appointment of a medical officer of health for the county, in room of Dr. J. C. McVail, recently appointed Deputy Chairman of the Scottish Commission under the National Insurance Act. The council considered a recommendation from the Public Health Committee that the present arrangement of a joint medical officer for the counties of Dumbarton and Stirling, which had subsisted since 1891, be continued, but on a division this recommendation was defeated, and it was agreed to have a medical officer for Stirlingshire at a salary of £500, with clerical assistance and travelling expenses, and the Public Health Committee was empowered to make the appointment. Suggested stipulations that the applicants be able to make bacteriological examinations and should reside in the county of Stirling were disapproved.

VOLUNTARY AID DETACHMENTS.

At a meeting of the Scottish Committee of the Council of County Territorial Associations, held in Edinburgh, Colonel R. C. Mackenzie, C.B., Chairman of Glasgow Association, presiding, the secretary intimated that the War Office could not sanction a capitation grant for Voluntary Aid Detachments. The intention was that the organization of voluntary aid should, as the name implied, be self-supporting. During the discussion which followed it was pointed out that an item of expense was the payment of doctors who gave instruction to the detachments, and in some districts it would be necessary to drop the detachment unless some extra assistance were given. Major Marshall (Fifeshire) said that instead of asking for a capitation grant it would be better if the Government would first place at the disposal of the county associations the equipment necessary for the medical lectures. It might also arrange with Regular or Territorial medical officers to deliver the lectures. In the course of the discussion it was stated that the Red Cross Society had the question at present under consideration, and it was agreed to let the matter drop meantime pending the result of the society's deliberations.

A public meeting convened by the Lord Provost was held in the City Chambers on February 7th to consider the formation of Voluntary Aid Detachments by the Glasgow Committee. Brigadier-General Sir John Hanbury Williams, in charge of army administration in Scotland, delivered an address, asking for the support of the public

in organizing for the care of the sick and wounded during war. Sir George T. Beatson also addressed the meeting, and explained the organization of the Scottish Territorial Red Cross Brigade. Councillor McEwan, the County Director, said it was proposed to have a first-aid detachment for each ward of the city, and that challenge cups for competition among detachments had been offered.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER AND DISTRICT.

Opening of St. Mary's Hospital.

THE new St. Mary's Hospital for Women and Children was formally opened on February 9th by the Earl of Derby, President of the hospital. The building and equipment have cost something like £60,000, which has been provided by Mr. E. Reid, as trustee of the late Mr. Mannassah Gledhill. For some months, however, after the completion of the building the board of management did not feel justified in opening the hospital for the patients who were waiting, as the money needed for its upkeep could not be raised, and the hospital stood ready but unoccupied as a reproach to Manchester. Last April, after several appeals for funds, it was partially opened, and all the accommodation provided was quickly taken up. It contains 111 beds, 86 for women and 25 for children, which are already in full use, and the ceremony performed by Lord Derby was only in the nature of a formal opening.

In declaring the hospital open, Lord Derby said the St. Mary's Hospital had been an institution for 122 years. During the first year of its existence 400 maternity patients were treated, including 72 in-patients, whereas last year there were 4,500 maternity cases, 800 operations were performed, and about 11,300 out-patients received treatment. The situation of the hospital was admirably adapted for obtaining fresh air for the patients, and it was convenient for the students of the neighbouring university. The board of management, after two special appeals, had received enough money to justify them in opening the building, but by no means enough to rid their minds of all anxiety, and there was still great need of funds. He sincerely hoped that the hospital would obtain that Royal recognition which was only accorded to the best of such institutions, and he would personally do what he could in attempting to obtain such recognition. He congratulated Mr. Reid on seeing the fulfilment of his benevolent design. The late Mr. Gledhill's money could not have been used for any better purpose than the foundation of a noble institution for the benefit of suffering humanity.

Sir F. Forbes Adam, Chairman of the Board of Management, in thanking Lord Derby, said he believed the difficulties of the board had now been removed. Mr. Reid had paid the whole cost of the building and equipment, and had done everything on such a scale as to provide one of the finest hospitals of the kind in the kingdom, but many months had elapsed before they could get funds to enable them to open the hospital. Dr. Edward Hopkinson then came forward and gave £2,000 on condition that the opening took place before a certain date. He was followed by Bishop Welldon, who gave £500, which had been placed at his disposal. Other gifts then came in, which formed the basis for an emphatic appeal to the public. He congratulated the architect, Mr. John Ely, on having provided a simple but beautiful building admirably adapted for its purpose. On behalf of the board he then presented Lord Derby with a gold key. Mr. H. Agnew, the Treasurer, said the result of the appeal to the public had been remarkable, as something like £40,000 had been raised, and they had also increased their subscription list by about £1,600 a year. One of the most pleasing things had been the way in which the committee of ladies, led by Mrs. Philips, had raised £1,000 in pennies and halfpennies, and had formed a guild to afford further support.

A vote of thanks to Lord Derby was supported by Bishop Welldon, Sir Alfred Hopkinson, and Mr. E. Reid, and the visitors afterwards inspected the wards.

The Care of the Feeble-Minded.

From the annual report for 1911 of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-Minded, it appears that the society is in a sound financial position though additional subscriptions are needed. The extent of the operations of the society is shown by the maintenance account, which entails an expenditure of £7,500 a year, and the value of the real estate amounts to about £30,000. It is urged that the question of finance is one in which the society ought to have Government assistance. The education grants cease when the children reach the age of 16; and though in a few cases, where the grants have been discontinued by education authorities, it has been found possible to persuade boards of guardians to undertake responsibility, in the majority of cases a child sent by an education authority becomes, on reaching the age of 16, an unrelieved charge on the society. Thus, as the years go by and the inmates of the home pass from the supported to the non-supported stage, there is arising additional need for assistance from the public. The total number of inmates is now 232, of whom 68 are over 16, and further provision has had to be made for the latter. The society is doing its best not to send any away on reaching the age of 16, and is looking forward to the promised Government bill to enable it to retain its inmates during their whole lives. During the year a new dormitory with 24 beds has been provided for the young women and a new house for the young men, and there is now separate accommodation, though not sufficient, for all ages of boys and girls and men and women. It had been hoped that a small hospital could have been provided with about 20 beds, but, so far, existing accommodation has had to be used. There have been very few removals during the year, though some few children have been discharged as too hopelessly imbecile for a colony only intended for the feeble-minded. No less than 55 different authorities have sent children to the colony from all over England and Wales, and many applications have had to be refused. The colony now contains 29 men, the oldest being 23, and 106 boys, the youngest being 6, and also 39 women and 58 girls. All the children that can learn to read and write do so, though the task of teaching is slow and laborious. The older boys and men are mostly employed in farming and gardening, and a carpenter and plumber are engaged to train some of them. The women and girls who are old enough are engaged in laundry work, and in sewing and knitting. During the year there was an outbreak of chicken-pox affecting 6 children, and also there were 5 cases of pneumonia, one of whom died. There was also an epidemic of tonsillitis among the girls at Warford Hall, 14 being affected. Two children developed trachoma, and were removed to the Royal Eye Hospital, Manchester. Epileptic attacks are common among the feeble-minded, and 15 children were affected, 4 being so bad that they had to be discharged. No child is admitted who is known to suffer from epilepsy, as it is not thought desirable to allow them to mix with the other children. It is noted that almost all the new-comers improve in physique after a few weeks' residence.

Post-graduate Course at Salford Hospital.

A course of post-graduate lectures is being given at the Salford Hospital. The first was delivered on February 1st by Mr. Garnett Wright, on localized abdominal tuberculosis, the second on February 8th by Dr. F. E. Tylecote, on cerebral influenza, and the third lecture by Mr. R. Ollerenshaw, on appendicitis, on February 15th. Mr. J. B. Macalpine will lecture on swellings in the neck on February 22nd, and Dr. G. C. Heywood on serious pleural effusion on February 29th. Other lectures will be given weekly before Easter. The lectures are given on Thursdays at 4.30 p.m.

SOUTH WALES AND MONMOUTHSHIRE.

Health of Cardiff School Children in 1911.

DR. WALFORD, medical officer of health, in his report for 1911 to the School Management Committee, states that there were 8,970 children examined, and of these 1,933 were referred for special medical inspection. Of 1,064 cases followed up by the school nurses, 111 were treated at the infirmary, 186 by local doctors, 19 by chemists, 23 at the tuberculosis dispensary, and 184 were not treated at all.

In addition to the foregoing there were 365 cases of defective vision, 304 of which were followed up, and 1,049 cases of defective teeth, 475 of which were inquired into. Of the eye cases 79 were treated at the infirmary and 213 were not treated at all, and of the cases of defective teeth 402 received no treatment. Dr. Walford said that where parents were able to provide for treatment they usually did so. The teeth cases gave most trouble. The question of establishing a school clinic was discussed, the general opinion being that, while some good would be done, it would be relieving some parents of duties which they could afford to pay for. The question was deferred for further report. Dr. Walford expressed himself in favour of a school clinic and of an open-air school.

WELSH NATIONAL MEMORIAL.

The executive committee of the West Wales Sanatorium agreed to the following conditions being submitted to the governors on the handing over of the institution at Alltymynydd to the Welsh National Memorial:

1. The institution changes hands on July 1st, 1912.
2. Until adequate accommodation for the whole of Wales is provided, patients from Carmarthenshire, Pembrokeshire, and Cardiganshire, shall have priority of admission.
3. That all obligations with regard to buildings and staff be taken over.

The Cardiff Board of Guardians considered a letter from the Welsh National Memorial Committee in which it was urged that the guardians should not proceed at present with their scheme for erecting their own hospital and sanatorium. Alderman Beavan advised the guardians not to let this communication prevent their going on with their proposals. They had had experience of paying for their patients in other institutions, and there was nothing new in the letter. Mr. Lloyd George had made it clear that boards of guardians would be excluded from grant clauses under the National Insurance Act. On the motion of the Chairman it was decided to go on with the purchase of land for the erection of an infirmary, and to deal with the question of a sanatorium when it arose. A member of the board pointed out that it would be some years before the National Memorial Committee would have its sanatoriums ready.

HEALTH OF CARDIFF FOR 1911.

Dr. Walford presented a summary of the vital statistics for Cardiff at the last meeting of the Health Committee. The estimated population was 182,729. There were 4,730 births, producing a birth-rate of 25.8 per 1,000, and 2,594 deaths, with a death-rate of 14.1 per 1,000. Zymotic diseases accounted for 364 deaths. The birth-rate compared with 26.5 in 1910, and an average rate for 1901–10 of 29.4, whilst the death-rate compared with 13.00 in 1910 and 15.00 in 1901–10. During the ten years ended 1901 the death-rate averaged 18.00 per 1,000.

VOLUNTARY AID DETACHMENTS.

The Glamorgan County Association has adopted a scheme whereby detachments of the St. John Ambulance Association in the county may be accepted and registered on an equal footing with those of the Red Cross Society. Amongst the names of those on the advisory committee are those of Lieutenant-Colonel Sheen, Lieutenant-Colonel Lloyd Jones, and Mr. J. Lynn Thomas, C.B. Mr. Lynn Thomas has, however, written, as a member of the advisory committee of the British Red Cross Society, expressing his personal disapproval of the action of the County Association.

BIRMINGHAM.

PROPOSED MIDLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

A MEETING will be held on Tuesday next, February 20th, at 5.30 p.m., at the Grand Hotel, Birmingham, to found an obstetrical and gynaecological society embracing the Midland, Eastern, and Western Counties of Great Britain. The invitation has been accepted by a number of medical practitioners in Birmingham and the Midlands, including several ladies. A dinner will take place after the meeting. Dr. Beckwith Whitehouse, 52, Newhall Street, Birmingham, who is acting as honorary secretary *pro tem.*, will be glad to receive the names of any practitioners desiring to become members of the new society at its formation.

Correspondence.

THE MEDICAL FEDERATION, LIMITED.

SIR,—The various evils and dangers which Drs. Taylor, Hall, and others in recent issues foreshadow as likely to result from a policy of defying the Insurance Act might, indeed, under certain circumstances, be too great to face. Happily, great evils bring forth great remedies, and we have to thank Mr. Lloyd George and his Act and their interference with the liberty and independence of the general practitioner for having brought forth an efficient defence in the shape of the Medical Federation.

Just as the Medical Defence Union for a trifling sum guarantees the practitioner against the injury and loss caused by any attempt to defame him, so the Medical Federation for a comparatively small sum will guard him against all injury and financial loss resulting from his resistance to the sweating tendencies of the age. Briefly, the Federation is a union of medical men to insist on decent conditions of practice and on a living wage, and it guarantees its members indemnity against diminution of income resulting from an attempt to augment that income. It has frequently happened that in disputes with friendly societies the medical man has had to choose between bankruptcy and submitting to extortionate demands of service, and has been forced by economic pressure to choose the latter alternative. Now, with this weapon of collective bargaining *plus* financial indemnity, every club doctor and corporation servant can feel that the moment he convinces the Federation that his remuneration is inadequate or his conditions of practice unsatisfactory he can hand an ultimatum to his employers, secure that he will suffer no loss thereby.

It is sincerely to be hoped that the executive of the British Medical Association will realize the effectiveness of this weapon and the desirability of securing it for the Association. The signatories of the Federation are imbued with the truest loyalty to the Association, and have decided to give it the first offer of profiting by their labours, content that they will have achieved something to the benefit of the profession to which they belong.—I am, etc.,

Fishponds, Feb. 10th. HARRY GREY, M.D.

THE DEBATE ON THE INCOME LIMIT IN THE HOUSE OF COMMONS.

SIR,—From a report appearing in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of February 10th it appears that Dr. Helme, in addressing the Cardiff Medical Society on January 16th, made the following statement:

> Sir Philip Magnus moved an amendment in the House of Commons which would have given us what we wanted, and included the £2 maximum limit as well, but our Medical Secretary, who was in the House during the debate, sent down a private note asking that it should not be pressed to a division. Dare the Medical Secretary do this without knowing it was in accordance with the wishes and policy of the Council?

Although I cannot, for obvious reasons, deal with the structure of inference against the Council which Dr. Helme builds upon his statement respecting my action upon the occasion in question, I am bound to deal with that statement as a question of alleged fact affecting myself which is entirely untrue. The untruth, indeed, will be apparent to any one who refers to the letters from Dr. Addison and myself to the *Times* which were reprinted in the BRITISH MEDICAL JOURNAL of January 6th. Dr. Helme makes a definite statement as to the alleged contents of what he speaks of as a private note sent down by me during the debate; his statement is so framed as to suggest that I gratuitously intervened for the purpose of influencing the action of those members of Parliament who supported the amendment moved by Sir Philip Magnus respecting the £2 limit. Both statement and suggestion will be seen by those who refer to the correspondence in question to be alike baseless. Although these letters appeared ten days before the date of Dr. Helme's speech, it is charitable to assume that he had not read them when he made the statement in question. I venture to submit, however, that even so, having obviously no first-hand knowledge of the circumstances, he might have made some inquiries from those who had such knowledge before making a statement as to what he supposed to be the facts

especially as he regarded these supposed facts as of such gravity as, in his judgement, of themselves to justify a vote of want of confidence in the Council of the Association.

For the information of those who have not read the correspondence in question and have not immediate access to that number of the BRITISH MEDICAL JOURNAL, I will briefly recapitulate the facts.

First, I did not voluntarily intervene in the matter in any way. Such part as I took was due to the fact that I was consulted, first, by Sir Philip Magnus himself; secondly, by a prominent Unionist member of Parliament; and, thirdly, again by Sir Philip Magnus. On each occasion the question was as to the expediency in the interests of the medical profession of pressing Sir Philip Magnus's amendment to a division, in view of the undisputed fact that it had no chance of being carried; and that, having regard to the course of the debate, there was a great probability that, on a division, the minority voting for it would be relatively small. This, it was suggested to me, might injure the prospects of the profession with regard to amendments that had still to be considered by the House. On each occasion I made the same statement—namely, that assuming it to be the fact, as I was advised, that the amendment had no chance of being carried, the question appeared to be one of purely parliamentary tactics as to whether the pressing to a division of an amendment which was certain to be beaten would, on the whole, have a prejudicial or beneficial effect on the general parliamentary interests of the profession at that stage. On this I did not feel competent to advise. But I stated that I was assured that the profession had full confidence in Sir Philip Magnus and other members of Parliament who had taken up our case with regard to the £2 limit, and that if they were satisfied that it ought not to be pressed to a division, I was assured that nevertheless the profession would feel that everything possible had been done by their parliamentary supporters. On the third, and last occasion when I was consulted, when I was called out of the Gallery by Sir Philip Magnus to confer with himself and one of the Unionist Whips, I left them with the understanding that the amendment *would* be pressed to a division, and I was surprised when the vote was taken without the House being divided upon it. The decision to take this course was arrived at, as I subsequently learnt, in a further conference, *in which I was not consulted*, between Sir Philip Magnus and several of the Unionist members, who sought also the advice of Dr. Addison. Dr. Addison has already, in his letter to the *Times*, reprinted in the BRITISH MEDICAL JOURNAL, stated the substance of what took place in that conference while he was present.

As this letter is written to the BRITISH MEDICAL JOURNAL for the information of the members of the Association, it seems proper to add, what it was not necessary to state in my letter to the *Times*—namely, the considerations which were present to my mind in giving the reply which I gave to the questions put to me.

First, I had regard to the terms of the resolution of the Representative Meeting, which constituted my instructions on the subject:

> That the Council be instructed to use their best endeavours to have the £2 limit fixed in the bill with provision for a lower limit to be fixed locally, but, failing that, to obtain as best they can the fixation of £2 as a maximum limit with such local option.

Secondly, I had regard to the course of the debate. As will be seen on reference to Hansard, Sir Philip Magnus's amendment had no support from any of the sections of the House composing the Government majority. Even on the Unionist side only one member, besides the University members, supported it, whereas so influential a Unionist as Sir Gilbert Parker, whose name appeared on the order paper as a supporter of the amendment, spoke against it, explaining to the House that he had become convinced that an income limit would be better secured in the interests of the profession, as well as of the community, by local action rather than as a statutory uniform national limit.

Thirdly, I was aware that in our canvass of members of Parliament, conducted through the Central Office and the Divisions in June and July, both we centrally found, and our Divisions reported, that many members who had promised deputations of their medical constituents to support them on other matters refused to do so on this.—I am, etc.,

Hendon, N.W., Feb. 14th. J. SMITH WHITAKER.

Sir,—I note with regret that, notwithstanding the full publication of the facts in the BRITISH MEDICAL JOURNAL of January 6th, in which you did me the honour of quoting a letter from myself to the *Times*, and letters also from Sir Philip Magnus and Mr. Smith Whitaker, who were personally conversant with the facts, Dr. Helme thought fit at Cardiff on January 16th to revive the very unfair and serious misstatement as to the part taken by Mr. Smith Whitaker with respect to Sir Philip Magnus's amendment on the £2 limit not being pressed to a division. As Sir Philip Magnus and others whom he consulted were good enough to call me to the conference, as a sequel to which the decision in question was taken, I am in a position to say that Mr. Smith Whitaker's letter to Sir Philip Magnus had nothing to do with the discussion, and so far as I remember no communication from Mr. Smith Whitaker was even mentioned. The cause of the decision was the conviction, first, that the amendment had not the remotest chance of being carried; secondly, that it was likely, having regard to the tone and tendency of the debate, to be defeated by an overwhelming majority; and, thirdly, that such a result might be prejudicial to the general parliamentary interests of the profession; that, in short, the profession had nothing to gain by pressing the amendment to a division, but had a good deal to lose. If any one needs further confirmation of this opinion I advise him to refer to the report of the debate in Hansard. To any member of Parliament such a debate afforded conclusive evidence that the motion before the House was certain to be heavily defeated.—I am, etc.,

February 14th. CHRISTOPHER ADDISON.

THE PROFESSION AND THE POLITICIANS.

SIR,—Whatever may be thought of the tone and style of your leaderette in yesterday's JOURNAL against Mr. Robertson, M.P., its inaccuracy is certain. You say that "we have no reason to believe that the shouting down" of myself at the Queen's Hall meeting "was inspired by political feeling." Although I showed you yesterday that your statement was not justified by the facts, you refused to officially correct it, and thereby forced me to do so.

Your own report of the meeting shows that the incident was undoubtedly "inspired by political feeling," and moreover, directly after the meeting I gave you personally the proofs that the occurrence was both political and organized. Though you speak in your leaderette as the Editor of the Association's JOURNAL, I do not believe that the members of the Association consider with you that the suppression of free speech was a "blunder." All the letters I have received from them and articles in other newspapers I have seen condemn it as being a "crime" against liberty.—I am, etc.,

London, W., Feb. 11th. VICTOR HORSLEY.

*** Sir Victor Horsley has had two conversations by telephone with the Editor about the incident at the Queen's Hall meeting, one shortly after the meeting, the other on February 9th. In the first, Sir Victor Horsley stated *inter alia* that he had been informed two days before the meeting that he was to be shouted down, and his recollection is that he then described the opposition as political. The Editor had no knowledge of any plan to refuse Sir Victor Horsley a hearing, and has no recollection of any reference to politics in this conversation. The Editor does not find in the report in the JOURNAL, nor in those published in the *Daily News*, the *Daily Chronicle*, or the *Times*, any suggestion that the incident was inspired by political feeling. Sir Victor Horsley has asserted that the incident was so inspired, but he has not furnished any proof of the assertion. The recent reference to the incident was introduced by Mr. J. M. Robertson in his

letter published in the JOURNAL of February 10th, page 336, and in commenting on it, quoting a well-known saying, we said that "it [the Queen's Hall incident] was worse than a crime, it was a blunder." In the second conversation Sir Victor Horsley complained, *inter alia*, that the Editor had not stated that the incident was political and organized, but again he advanced no proofs that such was the case. The Editor, therefore, would not have been justified in making such a statement.

SIR,—As you have referred to a disagreeable subject in your last issue, and accused about three thousand members of "worse than a crime" (*sic*) at Queen's Hall, might I ask any one interested to read the report of the Representative Meeting, as issued to Divisional Secretaries, and *then* to pass judgement on the two thousand and more members who showed their just contempt for the man who, at the beginning of this bitter controversy, advised us that "it was our duty to assist the Government." I ask you to publish this, as the JOURNAL should not adopt the style and manner of the Radical press on the morning following the Queen's Hall meeting.—I am, etc.,

Gillingham, Kent, Feb. 12th. IAN JEFFERISS.

P.S.—Is it not a fact that the man who was shouted down *is* a politician and a prospective Radical parliamentary candidate?

THE STUDY OF CONDUCT.

SIR,—After the opening paragraphs of Dr. Mercier's letter of February 5th, my mind became obsessed with the recollection of the classical joke played by a wag with boots. One morning at an early hour he stole out of his room and ingeniously shifted the boots and shoes of every man and woman in the hotel. When breakfast time came there was naturally a good deal of friction and confusion. Dr. Mercier has, with equal ingenuity, shifted round all our opinions, including his own. I am saved much trouble in recovering my own by a reference to my preceding letter, where I find that I did not object to the study of conduct, but that I did not assent to conduct being classed with attributes such as will, reason, etc. That is where I and others stood, and that is where we stand now, whether Dr. Mercier stands with us or not.

Dr. Mercier claims a victory from us. Let him take it *ad valorem*, but I implore him to count the cost before he persists in so doing. Let him think whether mere grouping amounts to "classing." Let him contemplate the impending horrors of fallacy. Let him read the following extract from a recent—indeed, I believe the most recent—authority on logic:

> The fallacy of Equivocation is a pervading and ubiquitous fallacy. It varies in subtlety from a manifest pun, that would not deceive a child, to a confusion the most subtle, the most difficult to detect, to recognise, and to avoid of all fallacies; and of all fallacies it is the most frequently perpetrated. Nothing is more frequent in reasoning, and especially in disputation, than the use of a term in two or more senses without any appreciation on the part of either of the disputants, or of the single reasoner, that it is used in more than one; nor is there any source so fertile of difference of opinion. In fact, difference that appears to be a difference of opinion about facts is very often, unknown to the disputants, difference about the meaning of words; and no controversy can be useful or fertile that is not preceded by a definition of the words to be used and an agreement about the meanings to be attached to them. It is not too much to say that in most controversies each party uses some important term, on which the controversy hangs, in a sense different from that understood by the other party; or uses the term first in one sense and then in another without any recognition or appreciation of the equivocation.

All this authoritative and good common sense is applicable alike to the major issue of what is conduct and to the minor issue of classing. I am sure that Dr. Mercier's conception of conduct is not that of those who are arrayed against him; and I am equally sure that he is not justified in treating grouping, such as has been practised in our syllabus, in the same sense as "classing" was used. One can collect, assemble, place together, and group bits of wild duck and some flour for the purpose of making a game pie, but would that justify one in classing duck with wheat for any other fertile purpose?

Originally I wrote of "placing conduct on the same plane as attributes, etc." But, on consideration, I thought that perhaps there might be critical inquiries as to what plane might mean, so I substituted the most general term I could think of, with the unfortunate result that Dr. Mercier has fallen to a fallacy.

I adverted in my last letter to the inexhaustible fund of genial and subtle humour possessed by Dr. Mercier. One present example thereof occurs to me. It is so subtle that I really think that it was not recognized by him, and that, therefore, it could not have struck him when he dragged us out of our restful retirement.

He urges us to gird up our loins and go to the study of conduct, and he urges not the lawyers, parsons, schoolmasters, bakers, or candlestick-makers, but us, the psychiatric physicians, presumably interested and possibly skilled in psychic affairs; and when we get to the study of conduct, according to Dr. Mercier, what do we find?

> In treating of Conduct, however, it is desirable to eliminate, as far as possible, reference to mental states and processes. We shall find hereafter that it is not always possible to eliminate such references completely, but at least it should be minimized.

And April 1st is weeks off yet!—I am, etc.,

Ticehurst, Sussex, Feb. 10th. H. H. NEWINGTON.

SIR,—Dr. Mercier stands self-condemned. Quoting the provisional syllabus for the proposed psychiatrical diplomas, originally suggested by myself and readily accepted by a subcommittee of the Medico-Psychological Association, he shows that one of the items was "Action, instinctive, volitional and automatic," and that another was "Defect and Disorder of Conduct"; yet he alleges that psychiatric physicians deny that the study of conduct is desirable. Moreover, at the meeting to which he refers he confused the controversy by saying, "Whether conduct is worth study or not is a question that I hope to hear debated this afternoon, but whether conduct can be included in psychology does not admit of debate" (meaning that it could not be included).

We are all agreed that conduct is worthy of study, and every textbook on mental disease is a study of the conduct of the insane. Modern works, indeed, go too far for Dr. Mercier; for he scoffs even at the names which have been given to certain varieties of insane conduct in order to draw attention to their existence and importance. Also every textbook on normal psychology with which I am acquainted includes a chapter or two on will, instinct, habit, etc., in other words, on conduct; and any attempt to dissociate this from other mental functions is doomed to failure, for perception, emotion, sentiment, judgement, etc., are the very springs of conduct. Dr. Mercier's letter in your last issue, for instance, is the result of his "amazement," "stupefaction," and "matagrabolization"; and his latest book is the outcome of his erroneous judgement that the study of conduct had never been attempted before.

To divide the study of conduct from psychology would, therefore, be as irrational as to learn the mechanism of the steam engine without knowing the properties of steam.

Dr. Mercier's burlesque analogies call for no comment; they are mere irrelevancies calculated to obscure the issues.—I am, etc.,

W. H. B. STODDART.

Bethlem Royal Hospital, London, S.E., Feb. 12th.

AS TO THE NATURE OF THE PARASITES OF LEPROSY AND TUBERCULOSIS.

SIR,—Assuming that the *B. leprae* has been grown on artificial media, it must be admitted that some accounts of its morphology are rather suggestive of mycological necromancy. Mr. Foulerton comes forward to reduce chaos to order and explains that these organisms are forms of Streptothrix (which is synonymous with Actinomyces). He reviews the life-history of a Streptothrix; his language is not precise, and I am compelled to state what I suppose he means in the following lines.

The young Sporothrix mycelium consists of (1) true branching hyphae, (2) which are septated. After a period of growth (3) small rounded forms are observed, singly, in pairs, or in short chains, and these have been proved to be germinative cells. (4) Short, oblong elements are also found which have been observed to be formed by multiple septation of the hyphae. Though somewhat irregular in shape at times, these also are germinative cells. (5) It has been observed that many of the hyphal cells degenerate and die, and that the different elements readily fall apart. Aërial hyphae are formed.

Referring to these five definite observations by their numbers: (1) proves that the organism is not a Schizomycete; (2) excludes it from the Phycomycetes. It must therefore belong to the Ascomycetes, the Basidiomycetes, or the Fungi imperfecti—and to which is usually readily determined by the fruits (or germinative cells); (3) proves conidial fructification, which is the most primitive known and common to all fungi (outside the Schizomycetes, at any rate); (4) proves oidial fructification, the second form of fruit, and therefore superior to the conidial. Now an organism is always located by its superior fructification, and as no other forms have been observed in Streptothrix, it must for the present be classed by its oidia in the Oospora of botanists. It appears that the French bacteriologists have already found for it a place in the sun. The genotype is *Oïdium lactis* (Fresenius), now known as *Oospora lactis;* and as this is a large and comparatively easy organism to study, English bacteriologists might make use of it to enable them to overtake their French brethren. Both *O. lactis* and *Oïdium pullulans* (Lindner) are well described and figured in Lafar's *Technical Mycology*, vol. ii, part ii, pp. 451–455.

It only remains to note that Mr. Foulerton thinks it "probable also that *endogenous* spore formation occurs." But this is quite another story. Expelled from the Schizomycetes, the organism has now a claim to be judged by the laws of botany. This involves the necessity of regarding the cell which contains the endospore as either an ascus or a sporangium. In any case the organism could find no accommodation in the Oospora. Have the French encountered any endospores in their organisms (which we are informed are synonymous with Streptothrix and Actinomyces)?

Most of our trouble in medical mycology arises from the fact that medical botanists insist on using the term "spore" for anything that is round. We all know what the market gardener means by seed potatoes, but it is often difficult to guess what the bacteriologist means by spore. Outside the parish of the pathogenic, the term "endogenous spore" has a definite meaning.

In his streptothrix, Mr. Foulerton has observed, "short chains of spores resembling streptococci." These streptococci at least may be regarded as *Streptothrix conidia*, as they are associated with the parent hyphal form. In an ordinary streptococcal chain the enlarged cell here and there naturally suggests such an origin for orthodox streptococci—the large element representing the chlamydospores in many torulas. Mycologists sometimes refer to Mr. Foulerton's "chains of spores" as "gemmating mycelium" (Lafar), at other times as "conidial chains," while Brefeld, in his well-known work on the smut fungi, called them "yeast conidia." To appreciate this it must be understood that yeasts cannot be classed as Blastomycetes. Rounded yeast is simply the conidial stage of a hyphal form. as was proved by the illustrious Danish saccharomycologist, Hansen, more than a quarter of a century ago.[1] A few yeasts form hyphae even on solid media—for example, *Sac. marxianus*—but these must usually be sought in the film that forms on liquid media after the growth of the conidial form has ceased. Such yeasts as form endospores on solid or other media are Saccharomycetes, and the conidium now functioning as an ascus contains ascospores. The life-history comprises mycelial, conidial, and sporogenous forms.

But there are yeasts which do not form endospores. These are what interest us at present. They are sometimes called "torulas," and are often conidial forms of unknown position. In some it is easy to induce hyphal growth, as in the yeast stage of the thrush fungus—which, by the way, in infections grows in the tissues in its conidial form. In such cases the yeast may be named after its hyphal form—mucor yeast, etc.—and so we may say Sporothrix yeast, as I pointed out[2] in criticizing Dr. Ritchie's *Sporotrichum beurmanni*. Much of what I said there will explain also some points in Mr. Foulerton's description of Sporothrix. I am interested to find that Mr. Foulerton has not encountered any form of Zygospore such as Dr. Ritchie described in his organism.

The object of this note is to suggest to English bacteriologists that it is time to abandon mid-Victorian mycology.—I am, etc.,

London, W., Feb. 12th. ROBERT CRAIK, M.D.Glasg.

[1] Lafar, vol. ii, pt. i, p. 126.

THE NEW CELL PROLIFERANT.

SIR,—I beg that I may be allowed to dissent from the opinion of Dr. Frederick W. Wright, who states in the BRITISH MEDICAL JOURNAL of February 10th, page 336, that the study of cell proliferants is not of much practical scientific gain. Surely the study of the causes of cell proliferation is not only the study of the cause of the reproduction of living matter, but also the study of the fundamental bases of heredity, development, pathology (in that it is the study of the cause of the cell proliferation of healing), the cause of tumours, including cancer, and the maintenance of life in the animal and vegetable kingdoms. What makes the individual cell reproduce itself (proliferate or divide are synonymous terms) should be, and probably is, the main question which pathologists, and certainly all those investigating the cause of tumours and cancer, are asking themselves. Is cell division due to "instinct," or is it caused by a chemical or a physical stimulus? This is the problem which many investigators are trying to solve; and in my opinion, as one of the investigators, the only way to solve it is to take individual living cells and to try to find out experimentally what will make them reproduce themselves. I do not think that one is justified in calling a substance a cell proliferant until it has been seen in the first instance to make individual living cells divide under the microscope.

Several years ago J. Loeb discovered that the development of the ova of sea urchins could be induced parthenogenetically by certain chemicals. Two and a half years ago I devised a technique by which individual white blood cells and certain epithelial cells were made to divide under the microscope in direct response to the chemical substances produced by cell death. In other words, the products of death seem to be the cause of cell reproduction. Further investigation showed that—in many instances, at all events—cells divide when they absorb a sufficient quantity of those substances which contain the amidine grouping; these are, for example, creatin, creatinine, xanthine. Or the primary amines, such as methylamine; or the amino acids, such as leucine and tyrosine, will also cause cell reproduction, all of them being the products of cytolysis. In spite of the fact that some cytological objections have been raised against the division figures induced by these agents in the living cells, for they seem to differ in some points from the well-known figures seen in dead and fixed specimens, the experiments have recently been confirmed by the production of tumours in animals by the agency of these chemicals, and cell division has also been induced by them in the ova of *Ascaris megalocephala*. Moreover, the action of these auxetic substances, as they were originally called, on certain of the protozoa leaves little room for doubt that they do directly cause cell division. The reason why so many substances, irritants and so forth, appear to cause cell proliferation when placed, say, on the surface of an ulcer, is probably because they are poisons, and in killing some of the surperficial cells set free the products of cytolysis enumerated above, which, in their turn, cause the proliferation of the deeper living cells. On the other hand, the so-called "new cell proliferant" may itself contain the amidine grouping—in fact, some authorities say that it does, and if so, it will directly cause cell multiplication; in either case its action is easily explained, although it seems a pity that it was not tested on individual cells under the microscope before it was hailed as a new discovery. It would appear that mechanical irritants act in a similar way to the chemical

[2] BRITISH MEDICAL JOURNAL, July 29th, 1911.

lnes, for by causing cell death they indirectly give rise to the auxetics which cause cell proliferation or even tumour.—I am, etc.,

London, S.W., Feb. 12th. H. C. Ross.

Sir,—As Mr. Prosper H. Marsden does not give Gerarde's *Herball* as a reference for the use of comfrey in former times, I would like to mention that Nich. Culpeper seems to have derived most of his account from that source, according to the edition published in 1636, as amended by Thomas Johnson, a copy of which I possess.—I am, etc.,

R. Atwood Beaver, M.D.Vict., M.B.Lond.

Clifton, Feb. 12th.

SYMBIOSIS.

Sir,—As the important question of the definition of *symbiosis*, raised by Mr. H. C. Ross in his letter which appeared in the British Medical Journal of January 6th last, has not yet elicited any reply, I beg leave to refer him to a treatise wherein this subject is dealt with at some length by Dr. J. McFarland.[1] This author suggests, I think very rightly, that *parasitism* is a form of *symbiosis*, and not the reverse as suggested by Mr. Ross, whose definition, in the light of recent research, does not seem to me to be adequate.

McFarland subdivides symbiosis into *commensalism*, *mutualism*, *helotism* and *parasitism*. The third of these subdivisions, *helotism*, is, I venture to submit, important in a medical evolutionary sense, having regard to those micro-organisms which constitute the normal flora and fauna of the human muco-cutaneous periphery. Certain of which, it is true, are known to become pathogenic on gaining ingress through accidental breaches in the epithelial continuity, or by becoming implanted in regions to which they have not been habituated. It is conceivable that at an early period of mammalian evolution the *Bacillus lacticus*, for example, may have been pathogenic; that during a later stage in the evolution of their hosts the latter became "carriers" of them, till in more recent times these organisms, in the opinion of certain high authorities, have become functional necessities of their hosts, by suitably modifying the chemical decompositions in the regions to which they have become habituated. In this form of symbiosis the leucoctye is supposed to enslave its erstwhile enemy, and enforce it to labour on its behalf.

This conception appears to me rational and in conformity with science, though to the superficial reader it will doubtless appear the very height of romance. But "truth is stranger than fiction."—I am, etc.,

London, W., Feb. 8th. H. D. McCulloch.

SIR JAMES BARR AND THE INSURANCE ACT.

Sir,—To fully meet the criticisms of Dr. Rugg Gunn, contained in his letter in your issue of February 10th, would require an essay on social philosophy of which I am not capable. I should not have thought that the almost platitudinous propositions of my letter of January 13th could have called forth so confused a medley of criticism as is contained in Dr. Gunn's letter.

In stating that "the interaction of mixture, heredity, and environment is as yet practically unknown in human affairs," I did not overlook the Mendelian discoveries and experiments, nor the application of the Mendelian principles to man. No doubt the future of human genetics lies largely in elucidating these principles, but at present even so enthusiastic a Mendelian as Professor Bateson hesitates, for he says in his *Mendel's Principles of Heredity:*

> In regard to some of these wide departures from expectation shown in many pedigrees of human diseases and defects, it is, I think, still open to question whether the transmission is a process comparable with that which we ordinarily designate as heredity.

I am as fully appreciative as Dr. Gunn of the importance of innate characters, and I am confident that, when human genetics is as well established as sanitary science, society will endeavour to control its own composition just as at present it is endeavouring to control its environment by dealing with public health and social reform. Future legislation and social action based on genetic physiology for the purpose of multiplying and propagating the worthy elements of the race will simply be an extension of our present-day social legislation, which really has its springs in the discoveries of modern science. These place in men's hands the power of controlling that environment, and this power is being used. Farr, Koch, Pasteur are probably more responsible for the Insurance Act than Dr. Gunn imagines. After giving qualified assent to his references to Mendelism I am utterly at a loss to understand his final appeal to Lao-tzu (600 B.C.). The *laissez faire* wisdom of that Chinese philosopher is utterly opposed to modern science, whether it deal with heredity or environment. A social theory based on *laissez faire* is utterly opposed to a social theory based on Mendelism, bacteriology, and modern science in general. How Dr. Gunn can advocate both in the same letter puzzles me. Even China herself has thrown over Lao-tzu (600 years B.C.). Under the pressure of Western civilization she has gone so far as to establish the constitution of a Republic and to pass laws to prevent her citizens from poisoning themselves with opium. We may even hope to see before long a Chinese Lloyd George introducing a State Insurance Act to the Chinese Parliament, and expounding with Oriental eloquence his plans for bringing refreshing fruits to parched lips. As a disciple of Lao-tzu (600 B.C.) Dr. Gunn will soon be a lone voice in the wilderness crying aloud, "Govern a great nation as you would cook small fish, that is, don't overdo it."

My statement "that most legislative enactments dealing with health and social reform are of the nature of experiments, whose ultimate outcome from the racial point of view cannot be predicted," hardly needs defending, in spite of the quotation from the elaborate investigation by Drs. Davenport and Weeks. The statement follows from the recognition of the difficulty of the problem dealing with the transmissibility of acquired characters and of our ignorance how far environment suppresses or brings to light genetic qualities; and further experience shows that these Acts are continually being modified by repeal and amendment. I cannot follow Dr. Gunn in his classification of society into "two natural divisions—upper, intelligent, disorganized, disunited, and devoid of proper leadership; and lower, non-intelligent, united, organized, led." It seems rather paradoxical, and I only hope he does not include the medical profession in the first division.

If I may make so bold, I would warn him against classification, which in the past has proved so formidable a barrier against sound speculation.—I am, etc.,

Warrington, Feb. 12th. J. S. Manson.

THE DANGERS OF ALCOHOLIC INSANITY.

Sir,—So much controversy has taken place as to whether drink does or does not ultimately lead to insanity, that the very important point is apt to be forgotten that drink does undoubtedly cause insanity—alcoholic insanity.

The main point in connexion with alcoholic insanity, on which those who deal with it are pretty generally agreed, is that the law dealing with such cases is hopelessly inadequate. These patients usually find their way to the lunatic wards of the workhouse infirmary, and workhouse medical officers often complain that cases of alcoholic insanity, with homicidal or suicidal tendencies, are readmitted to the insane ward two or three times in the same year, and the probability is that they are positive dangers to society on many other occasions.

The trouble is that this form of insanity is of such a fleeting nature that the patient may be all right next morning after a night's rest, or the dangerous symptoms may pass off in an hour or two, so that only those who have actually seen the patient at the time could state that he had suffered from temporary insanity. This, of course, would lead to great difficult in certifying under the present regulations.

When a man is discharged from an asylum as "cured" he either remains permanently "cured" or for a reasonable time, but alcoholic insanity is such a curable form that it becomes one of the most incurable and dangerous, as the patient is again allowed to mingle in society with unlimited opportunities of again becoming a lunatic at any time.

If a man is admitted as a lunatic on a "fourteen days' order," it hardly seems fair to the man himself or to

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[1] *Biology, Medical and General.*

society to discharge him at the end of the fourteen days, however sane he may appear; and it hardly seems just to treat a man as a lunatic on one occasion and as a criminal on a subsequent occasion, when he was really irresponsible for his actions. The point as to whether he should be held accountable under such circumstances I will not discuss, but I think the State should hold itself responsible for the actions of those who are known to suffer from such a frequent form of recurring lunacy.

The following case serves to illustrate some of the points mentioned:

A man was detained as an alcoholic lunatic on a three days' order, and on a subsequent occasion he came into the tramp ward of the workhouse at night in a state of alcoholic excitement. Without any provocation he turned suddenly on the night attendant, knocked him down and gave him a terrific hammering, and might probably have made an end of him if the day attendant had not heard his shouts for help, and rushed to the rescue. The man was sentenced next day as a criminal to a short term of imprisonment, but if he had been detained in the first instance that would not have happened, and society would know that there was no possibility of further crimes. But similar or worse crimes may occur on his release. In such cases, once a lunatic always a lunatic, is pretty generally true, and a fourteen days' detention order should be changed to a much more permanent form.

The number of murders and suicides accounted for by drink is so great that something more drastic than the present arrangement is urgently called for; and when a man who in other respects has been quite exemplary commits a crime when "mad with drink," and has no proper recollection of it next morning, or when he has sobered down shortly after the shock of the accident, he can hardly be held entirely responsible for his actions, and certainly not if he has been certified as a lunatic before.

Undoubtedly alcoholics are dealt with under the Inebriates Act, but as a rule such cases (which usually swell the ranks of peripheral neuritis) have been before the magistrates thirty or forty times, and are more of a nuisance than a danger to society.

It seems a big business, but, after all, the number of alcoholic lunatics as compared with the total number of "drunks" is very small, and the benefits to society in general would be of such an incalculable nature that it would undoubtedly be worth while. It would be an excellent tonic to society. The friends who have to live with the patient do not, as a rule, regard the fourteen days as sufficient, and quite commonly at the end of the period they come and say, "Are you sure he's all right now? Could you not keep him a little longer?" I certainly think that the present conditions are unsatisfactory.—I am, etc.,

JOHN M. MACPHAIL,
Assistant Medical Officer,
Eastville Workhouse, Bristol.

February 6th.

THE NATURE AND ORIGIN OF CANCER.

SIR,—In a letter published in the JOURNAL of February 10th Dr. Brock endeavours to disprove my hypothesis of the existence of a *material* governing secretion by pointing out "that the agency which regulates and controls the disposition of the cells in the body obviously exists in the developing embryo, before the three glands which he names have appeared, and that it therefore cannot possibly be made up of their secretions." I would remind him that the fetus is part and parcel of the mother, and that it derives its nourishment from the maternal blood, where the secretions already exist.

Where I differ from Dr. Brock is that he looks upon the regulating agency as some "force" or "law" which is supposed to be inherent in every organism, and is the cause not only of its first development but of its subsequent maintenance in a state of health. This is a happy assumption, involves no serious thought, and can be used to explain many difficult problems. But does it not savour more of common sense, while knowing that there is a causative force of some kind in life, to recognize that it acts through a *material* instrumentality—the organism—with the physiology and pathology of which we are only concerned? Should, say, part of the machinery in a cotton-mill break down, the engineer in charge will promptly disconnect and repair that part; if, however, all the machinery stop, he knows that the motive power, the "actuating force," has gone—the mill is lifeless. Similarly, in the human organism, we try to remedy any defects in the machinery, which we cannot properly do without first knowing the machine; the "actuating force" is beyond the province of the materialist, and I have not heard of a psychologist restoring the dead to life.

The body is, after all, a mass of protoplasm, an extremely complex chemical substance, or rather mixture of chemical substances, constantly undergoing katabolic and anabolic changes of a chemical nature—material enough, in all conscience.

Dr. Brock flatters me when he calls my theory a "scientific explanation." It has only reached the stage of a working hypothesis. At any rate, its application has been effectual in saving the life of a woman suffering from cancer of the oesophagus. Surely far better this than groping hither and thither in a psychological fog, with the patient meanwhile slipping through one's fingers.—I am, etc.,

Wigan, Feb. 12th. J. THOMSON SHIRLAW.

SIR,—Dr. Brock has quoted a parenthetical remark of mine as if it were my main point. When I said that the multinuclear giant cell was the "managing director" of cell activity, I referred, of course, to the cell activity which is coexistent with irritation and antecedent to the formation of cancer. The point I wish to emphasize is that the germ cell of cancer is the product of the conjugation of a sperm with a tissue cell. It is undoubtedly a fact that the germ cell is a fertilized tissue cell, and I offered the suggestion that, as multinuclear giant cells are found wherever there is cell activity, the microzoon required to connect the chain, and to fertilize the tissue cell, is a discharged nucleus from a giant cell.

I am well aware that, in Dr. Archdall Reid's words, "every hypothesis is a mere guess until every other alternative hypothesis has been considered, and until it has been demonstrated that only the chosen hypothesis accords with the whole of the available and authentic evidence," but as I have not the opportunities for experimental investigation, I consider that the scientific use of the imagination need not be kept under such severe restraint, and, therefore, I invite others to apply the tests of the phenomena of cancer to this hypothesis.

Since I last wrote to you, sir, there has passed away from among us a great master mind. Sir Henry Butlin's researches and observations on this subject have directed our knowledge into its present channel, and were, indeed, the starting point of this discussion. From him, my old master, I acknowledge with gratitude I received not only my first lessons in clinical pathology twenty-two years ago, but also much counsel and many kindnesses almost up to the last. Words would fail me if I attempted to describe my admiration for him and for his methods of precision. We have now but the recollection and the example of him left, and the legacy of his writings. In his last lecture he referred to an intention of publishing some further phenomena of cancer. It would be interesting to know whether there is any record of these, and whether he committed to writing any further thoughts arising from the published correspondence in your columns.—I am, etc.,

Stowmarket, Feb. 12th. H. T. DUFTON.

SWEETS IN CHILDHOOD.

SIR,—A point of as much, if not of more, consequence than the effect of one or of another carbohydrate on the teeth appears to me to be the relative influence of deficiencies in the mouth, and defects in their structure. The tendency of starchy and sugary food to "stagnate," as Mr. Turner says, among the teeth is increased by a shortening of the jaws and consequent overcrowding of them, and is thus an illustration of the circumstance that decay is not independent of influences additional to those in the mouth.

Whatever difference in opinion there may be as to the causation of caries, there is, I think, insufficient ground for Mr. Hopewell Smith's assertion quoted by Dr. Hildesheim, but on the contrary it has, in my belief, been already largely determined by dental surgeons, and rests

to a great extent between a combination of the results occasioned by adverse influences in the mouth as described by different authors, and defects in the inherent structure of the teeth, which some maintain has a potent influence in its incidence. The observations of Mr. May, Dr. Letheby Tidy, and Dr. Whitwell show that they either incline to, or are of, the same opinion. Judging by the opening remarks of Dr. Sim Wallace, in his letter of December 16th, 1911, on the malnutrition among sufficiently fed children, there seems to be a possibility of his becoming more open to accept the view. It is to be hoped this will eventually become generally accepted, rather than that it is due to one cause only, and then the question of the increasing prevalence of caries in recent years may become more readily discernible. The need of arresting the latter occurrence is evident when it is realized that the agencies which induce it are also doubtless effecting injurious results in other tissues of the body.

The question of sweets appears to resolve itself largely into one of degree, and while there may be no reason to disapprove of a moderate consumption, the excessive use of them may be, as Dr. Tidy and Dr. Whitwell suggest, one of the many causes which occasion detriment to the teeth; similarly that excess in other directions may be harmful to various structures. As to the judicious employment of sugar, it is usually considered that more strenuous effort is required in civilized communities since steam and electricity revolutionized existence; being a food of especial value in the maintenance of heat and energy, it is thus likely to be more needed at the present time than at any other period in the history of the world. —I am, etc.,

Oxford, Jan. 27th. A. STAYT DUTTON.

PELVIC HEMORRHAGE AND ECTOPIC GESTATION.

SIR,—Your leader on this subject in the JOURNAL of February 10th, p. 323, of a case of haematocele caused by rupture of an ovarian blood-cyst, is interesting to me, as not only bearing out my own experience, but also raising the question as to views I have expressed with regard to the origin of some cases of acute illness arising during menstruation.

In the BRITISH MEDICAL JOURNAL of January 26th, 1907, I quoted a series of 4 cases of acute illness arising during menstruation, one of which cases was accompanied by all the clinical features of a haematocele. Since then I have seen at least 3 cases in which during menstruation the patient has been seized with acute pain in the side, nausea or vomiting, a certain amount of collapse, a rise of temperature in one case amounting to 102°, in the other case to 101°, and in one case attended by the formation of a doughy swelling in the pouch of Douglas.

In this case the patient was menstruating, and jumped over a wall. When I saw her she was vomiting severely, had missed no periods previously, had a bloody vaginal discharge, typical of menstrual fluid, and the pouch of Douglas was full of what felt like clot, the uterus was not enlarged, the cervix was not softened, and there were no breast changes or anything to lead the patient to think she had been pregnant.

I wished to operate at once, but the friends would not consent unless I could say that an operation was absolutely unavoidable. This I could not do, as, judging from former experience, if the diagnosis were right—of haemorrhage from a ruptured Graafian follicle—I thought the clot would quickly absorb. As I met this patient out walking a fortnight after, this view had proved to be correct, and the doctor informed that she had made an uninterrupted recovery.

The other two cases I confirmed by removing the affected ovaries soon after menstruation had ceased: both cases I had advised operation to previously, one for persistent retroflexion of the uterus and a prolapsed and adherent ovary; this ovary I found was enlarged to the size of a hen's egg, and at one side was a blood cyst, and from this blood clot was diffused in the stroma of the ovary, and the fluid part of the blood was so near the surface that the cyst ruptured, and some of the contents escaped as I brought it out of the abdomen.

In the other case I had to deal with chronic oöphorosalpingitis after puerperal sepsis, and here when I cut through the ovary after removal in its centre was a clot the size of a nut, there was also a cyst enlarging it up to the size of a hen's egg. The symptoms in this case were so acute, namely, retching, pallor, collapse, and intense iliac pain, that the doctor, who had seen several cases of acute tubal gestation, asked me if I thought this might not be a case.

Personally, I think that these cases show that the process of ovulation may become pathological, and may, by the damage caused to the ovary when distended with blood lead to ovarian dysmenorrhoea and adhesion, and by its extra weight to prolapse.—I am, etc.,

Cheltenham, Feb. 13th. THOMAS HOLMES, M.S., M.D.Lond.

MORPHINE POISONING.

SIR,—Dr. D. M. Macdonald (Leven, Fife) has recorded a case,[1] which I should like to comment upon. It is just thirty-five years since I introduced and published acid permanganate as an accurate quantitative test for morphine, uric acid, and a hundred other things. It is a quarter of a century since I published potassium permanganate as an antidote for morphine and opium poisoning. Dr. W. Moore, at a banquet of medical men ten years afterwards, took 3 grains of morphine, and it was followed by, I think, 4 grains of permanganate. He made me ashamed that I had done so little to make the antidote known, that I devoted the next two years to the extension of the permanganate method, and published forty serial articles in one of the minor medical weeklies. The two points which have called my attention to the subject are these: First, did Dr. Macdonald really use Condy's fluid, for the proprietors some time ago made it clear to the public that such was not potassium permanganate. If Dr. Macdonald did use Condy's fluid, I have nothing to say with respect to the fact, but let it be so recorded. If he did not use Condy's fluid, but used permanganate, then, in the interest of accuracy and of medicine, let such be stated, because in one of the published cases, I think in the BRITISH MEDICAL JOURNAL, both solutions were used. The next point is: Why did Dr. Macdonald conclude that the irrigation of the bowel by the oxidizer was "questionable if it was any good"? Nothing could be more rapid than the breaking up of morphine, quinine, cinchona salts, and uric acid, by the action of potassium permanganate, especially if made acid.

Whereas many alkaloids, as I have described in the articles mentioned, are not broken up by weak acid potassium permanganate—such are, atropine, crystallized aconitine, cocaine, caffein, hyoscine, and hyoscyamine—I doubted myself whether the method of hypodermic injection of permanganate in cases of morphine poisoning could do any good, as practised by Dr. Moore after his demonstration, for the pemanganate is at once decomposed by albuminous fluids, and I have only found time differences in action, and no special selective affinity. But, here, even, we must not be too sure; for I have a patient who has taken about half a grain of potassium permanganate every morning for more than ten years, and I am obliged to believe what he states—that he has made fundamental alterations in his economy and in his urine.

My past and laborious work should at least have universally established that oxidization, as an antidotal method for all albumen poisons and for most or many alkaloid poisons, should be co-ordinated with stomach-pump and emetics, far beyond physiological antidotes such as we at present possess.

We still seek oxidizers for some plant poisons other than the albuminous ones.—I am, etc.,

London, S.E., Feb. 8th. J. BARKER SMITH, L.R.C.P.

[1] BRITISH MEDICAL JOURNAL, February 3rd, p. 284.

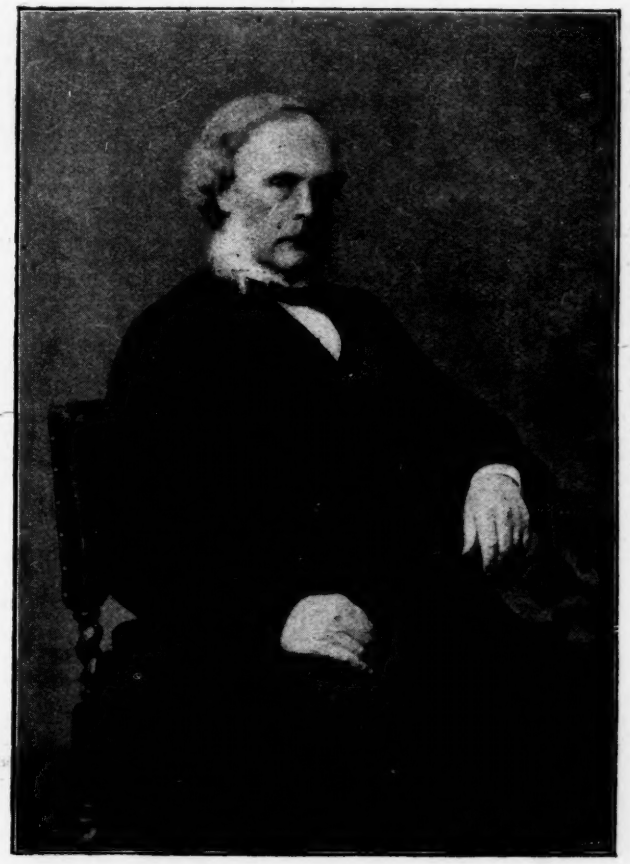
ON January 11th the new building of the New York Post-Graduate Medical School was opened to inspection and use. The plant provides for eleven operating rooms and groups of teaching rooms for each of the departments, besides extending the capacity of the hospital service to about 400 beds. The curriculum of the school is correspondingly extended and adapted to the tripled facilities.

Obituary.

LORD LISTER.

PRIVY COUNCILLOR; MEMBER OF THE ORDER OF MERIT; FELLOW AND SOMETIME PRESIDENT OF THE ROYAL SOCIETY; KNIGHT OF THE PRUSSIAN "ORDRE POUR LE MÉRITE," ETC.

ALTHOUGH Lord Lister had passed the ordinary span of human life, and although he had spent many of his last years in retirement, his death comes upon us almost as the disappearance of a star. In him the profession has lost its brightest ornament and the world one great among the very greatest men of all time. The news was not, of course, unexpected. He had been for years in failing health, and those who saw him at the Guildhall in 1907 were painfully struck by his wasted form, the weakness of his voice, and the general infirmity of body to which his whole appearance bore witness. He had for some time been partially disabled by an affection of the joints, but the immediate cause of death was pneumonia which carried him off in four days. Death took place at Walmer on the morning of Saturday, February 10th. Unlike so many pioneers of new regions of truth, he lived to see the complete fulfilment of his work and its acceptance by the whole scientific world. Of him it may be said in the words of Cicero: "In such a death there is neither pain nor bitterness, but as a ripe fruit is lightly and without violence loosened from its branch, so the soul of such departs ungrieving from the body wherein its life's experience hath lain."



Full accounts of Lord Lister's life and work have been given in the JOURNAL at various times in recent years—more especially in the issue of December 13th, 1902, which was a Special Lister Number; in that of April 6th, 1907, on the occasion of his 80th birthday; and in that of June 5th, 1909, when his *Collected Papers* were reviewed. To these we would refer the reader for further details. Only a comparatively brief summary of the chief events of his career therefore need be given now.

Joseph Lister was born on April 5th, 1827, at Upton, in Essex. He was the son of Joseph Jackson Lister and Isabella, daughter of Anthony Harris, of Maryport, Cumberland. Of his father he wrote an interesting sketch in 1870 which was republished in his *Collected Papers*. Joseph Jackson Lister was a very remarkable man, who, leaving school at the age of 14 to assist his father, who was engaged in the wine trade, found time amid the cares of business to supplement his education, especially in mathematics. He was especially interested in optics. He made great improvements in the microscope; in particular, he was the first to solve the problem of the production of achromatic lenses. He was described by a great authority as "the pillar and source of all the microscopy of the age." Mr. Joseph Jackson Lister was a Fellow of the Royal Society, and, in the words of his illustrious son, rendered services to scientific study that can hardly be over-estimated.

Lord Lister, who was of Quaker stock, received his early education at a school kept by members of the Society of Friends at Tottenham; among his schoolfellows were Dr. Wilson Fox and W. E. Forster. In due course he went to University College, London, taking the degree of Bachelor of Arts at the University of London in 1847. He then studied medicine in the Medical Faculty of the College, and graduated M.B. at the University of London in 1852. In the following year he was admitted a Fellow of the Royal College of Surgeons of England.

Lister may be said to have grown up in a scientific atmosphere. During his period of studentship he came greatly under the influence of Sharpey, the Father of British physiology; he also worked hard at chemistry under Graham. The teaching of these men, together with the great advantages given him by his father's inventions and his work and example, gave him a powerful impulse towards the cultivation of pure science. His first investigations were mainly in the domain of histology. But he by no means neglected the clinical side of his profession. He was, we believe, Erichsen's first house-surgeon, and he was house-physician under Walshe, one of the greatest physicians of the last century. After completing his studies in London, he went at Sharpey's suggestion to Edinburgh, where he worked under Syme for some years, first as House-Surgeon and afterwards as Assistant Surgeon at the Royal Infirmary. We get a glimpse of him at this period from the late Professor Annandale, who wrote in the Lister Number: "As from my earliest student days I attached myself to these (Syme's) wards, I had constant opportunities of studying Mr. Lister's methods, and along with my fellow students I soon learnt to have a sincere admiration for his thorough earnestness in the advancement of his profession and his devotion to the interest and treatment of the patient. He gave valuable assistance to Mr. Syme in connexion with his infirmary work, and I specially recollect how successfully he aided him in several of his brilliant operations. One of these operations was that in which Mr. Syme boldly opened into a traumatic aneurysm of the left carotid artery low down in the neck and

secured the vessel above and below its wounded point, and in this way saved the life of the patient, and probably also saved the man who had stabbed the patient from being hanged.

"The other case was one of a large right axillary aneurysm, which was also successfully treated by laying open the sac and tying the ruptured artery. The aneurysm, owing to its size, had elevated the clavicle, rendering satisfactory compression of the third part of the subclavian artery impossible. But Mr. Syme overcame the difficulty by making a small incision through the skin and fascia immediately above this bone, and through this wound Mr. Lister passed his finger down and successfully compressed the artery until the injured vessel was secured."

Lister began a course of extramural lectures on surgery in the old High School Yard. At that time he was carrying on investigations in regard to the coagulation of the blood, and his students were enlisted as assistants in his many experiments. "Many hours," says Annandale, "were spent by us in this way in the slaughter-houses, in the Veterinary College, and in his private house, and we could not but be struck with the ingenuity of these experiments and the great care which was taken to make their results accurate."

In 1856 Lister married Syme's daughter. The union was one of ideal happiness. In his wife Lister found not only love and sympathy but active helpfulness. Only those who knew him are aware with what devotion she assisted him in his scientific work. His relations with Syme were also of the pleasantest. The older man took great pride in the work of the younger, and foresaw, at least in part, the developments in surgery to which it was to lead. Lister was of a sociable disposition, and was popular with his students, and welcomed guests at his own house. He was a prominent figure in the company, including distinguished foreigners, which often gathered under his father-in-law's hospitable roof. On some of these occasions Lister did not disdain to entertain the company by singing "Jock o' Hazeldean."

The scientific work done by Lister at this period cannot be better summarized than is done in the Introduction prefixed to his *Collected Papers:*

"The earliest papers were on the duration of vitality in the tissues, on the structure of involuntary muscular fibre, and on the cutaneous pigmentary system of the frog. Another group of papers dealt with the early stages of inflammation, with gangrene from arteritis, and with the coagulation of the blood both within and without the blood vessels, while a third group was concerned with the nervous system, and included observations on the functions of the visceral nerves, with special reference to the inhibitory system; on the parts of the nervous system regulating the contraction of the arteries; and on the structure of nerve fibre. It is not difficult to perceive the interrelation of these several lines of study and investigation, and the perusal of the papers in which they are embodied affords an interesting example of acute reasoning applied to the interpretation of the results of accurate observation and experiment."

In 1860 Lister was appointed to the Chair of Systematic Surgery in the University of Glasgow, becoming Surgeon to the Royal Infirmary of that city in the following year. To understand what he accomplished one must know what surgery was when he entered on his duties as Surgeon to the Glasgow Royal Infirmary. Surgical wards were ravaged by pyaemia and hospital gangrene, and the mortality after operations was excessive. The number of disasters was greatly increased by the discovery of anaesthetics, which gave a great impetus to operative surgery. As surgeons used the knife much more freely than they had done before, when only particularly favourable subjects could be chosen, the immediate result was a large increase in the number of deaths after operation. When Lister went to Glasgow, inflammation and suppuration were universally regarded as natural processes in wounds by surgeons, who directed their efforts, by means of poultices and other applications, to helping the formation of what was called "laudable" pus. Septic disease was everywhere rife, and was the mere despair of surgery. These things were looked upon as inevitable. Sir Hector Cameron, who worked under Lord Lister when he made his first attempts in the direction of antisepsis, describing the state of things at that time, says:

> Every wound discharged pus freely, and putrefactive changes occurred in the discharges of all, producing in the atmosphere of every ward, no matter how well ventilated, a fetid, sickening odour, which tried the student on his first introduction to surgical work just as much as the unaccustomed sights of the operating theatre. It is hardly necessary to add that fatal wound diseases and complications were never absent at any time from the hospitals of that day

It is worth while to point out that, according to Sir Hector Cameron,

> Lister soon began to enjoin on all persons in his clinic the practice of scrupulous cleanliness, which was at that time by no means always a characteristic of surgical practice. The washing of hands was insisted on after dressing each individual case, and large piles of clean towels stood on the tables of his wards for the use of his dressers and nurses.

Lister's work on inflammation, valuable as it was did not lead him directly to his great discovery. But, unlike the surgeons of that day, he was not content to accept inflammation and suppuration as a necessary part of the process of healing. He believed that the natural course of events was that a wound should heal, like a simple fracture or other subcutaneous injury, without inflammation, suppuration, or septic infection. He recognized that the source of the mischief in wounds was putrefaction, and that the prevention of this should be the aim of the surgeon. The idea was in his mind at the very beginning of his career, when he was Erichsen's house-surgeon in University College Hospital. The accepted teaching of the day, that putrefaction was due to the action of the air, particularly of the oxygen, on the organic fluids in wounds, did not satisfy him, and in the various methods of dressing adopted by him he never made any attempt to exclude that constituent of the atmosphere. As has been said, he insisted on rigorous cleanliness, and his wards were so insanitary that neither this nor frequent changes of dressing, nor careful drainage, nor free washing with warm water and Condy's fluid, availed to check the prevalence of pyaemia, erysipelas, and hospital gangrene. Pyaemia is now little more than a memory to those who have witnessed the gradual diffusion of Lister's teaching. The same thing may be said of hospital gangrene. What

that fearful scourge was may be learnt from John Bell who, in his *Principles of Surgery* (1801), says:

When it rages in a great hospital it is like a plague; few who are seized with it can escape. There is no hospital, however small, airy, or well regulated, where this epidemic ulcer is not to be found at times; and then no operation dare be performed! Every cure stands still! Every wound becomes a sore, and every sore is apt to run into gangrene; but in great hospitals especially it prevails at all times, and is a real gangrene. It has been named the Hospital Gangrene; and such were its ravages in the Hôtel-Dieu of Paris (that great storehouse of corruption and disease) that the surgeons did not dare to call it by its true name; they called it the rottenness, foulness, sloughing of the sore! the word, hospital gangrene, they durst not pronounce: for it sounded like a death-bell; at the hearing of that ominous word, the patients gave themselves up for lost. In the Hôtel-Dieu this gangrene raged without intermission for two hundred years, till, of late, under the new government of France, the hospital has been reformed. "A young surgeon (says an ancient French author) who is bred in the Hôtel-Dieu may learn the various forms of incisions, operations too, and the manner of dressing wounds; but the way of curing wounds he cannot learn. Every patient he takes in hand (do what he will) must die of gangrene."

What, then, says the same author, speaking of the treatment of hospital gangrene, is the surgeon to do?

Is he to try experiments with ointments and plasters while men are dying around him? Is he to expend butts of wine, contending, as it were, against the elements? No! Let him bear this always in mind, that no dressings have ever been found to stop this ulcer; that no quantities of wine or bark which a man can bear have ever retarded this gangrene; let him bear in mind that this is a hospital disease, that without the circle of the infected walls the men are safe; let him, therefore, hurry them out from this house of death; let him change the wards, let him take possession of some empty house, and so carry his patients into good air; let him lay them in a school room, a church, a dunghill, or in a stable (like Paree's (*sic*) gangrened soldier); let him carry them anywhere but to their graves.

These scourges were so prevalent in the Glasgow Royal Infirmary that Lister says he felt ashamed, when recording the results of his practice, to have to allude so often to hospital gangrene and pyaemia, and he came to welcome simple fractures, though of little interest either for himself or the students, because their presence diminished the proportion of open sores among the patients. In other hospitals, both in this country and abroad, the state of things was just as bad.

Then came the discoveries of Pasteur, which revealed the cause of putrefactive fermentation to be the development of living organisms in the dust of the atmosphere. Lister forthwith applied the new doctrine to the treatment of wounds. By his conviction that the ideal to be aimed at was that a wound should heal like a subcutaneous injury he was led to apply it first in the treatment of compound fracture. The effect was immediate and striking. Not only did repair occur without systemic disturbance, but primary amputation, which before was almost a thing of the past, and not only innumerable limbs, but a vast number of lives were saved. He observed that the crust formed by the carbolic acid applied as a dressing and the blood became organized into living tissue, and that dead bone, instead of being exfoliated, was absorbed. From compound fracture he extended his treatment to psoas abscess, and gradually to wounds of all kinds. Although at a shallow depth, under his wards were found a multitude of putrefying bodies of people who had died of cholera in 1849, and who had been buried in pits, he was able to report to the British Medical Association in 1867 that during the previous nine months not a single case of pyaemia, erysipelas, or hospital gangrene had occurred in his wards. How had this miracle been wrought? It could not be ascribed to mere cleanliness, though that was most strictly enforced; the influence of sanitation was absolutely excluded by the existence of the sources of putrefaction in the near neighbourhood of the wards. This very fact, indeed, formed an *experimentum crucis* that proved that the change was due to the adoption of measures which killed the invisible agents which produced septic disease.

It is unnecessary to repeat here the oft-told tale of the evolution of modern surgery on the lines laid down by Lister. It can be read in detail in our Lister Number, or in the Introduction to his own *Collected Papers*. It is enough to say that Lister, taking Pasteur's pregnant discovery as his guide, studied for himself with characteristic thoroughness the action of micro-organisms in producing putrefactive fermentation in organic fluids and the methods of preventing their development. Next, with the infinite capacity for taking trouble which has been said to be the essence of genius, he tried how the new principle could most effectively be applied to the treatment of wounds. His early methods were crude and cumbrous, and he gave nearly the whole of his professional life to perfecting them. His aim was towards simplification, and he abandoned the carbolic acid spray and other details as soon as he was convinced that they were unnecessary. To gain any notion of the inexhaustible patience with which he worked, his own papers must be read. It will there be seen that he would pursue a research for a score of years, ever seeking for sources of fallacy, for causes of failure, and for the often elusive secret on the discovery of which final success depended. The most striking characteristics were his absolute candour and open-mindedness. He was always ready to confess mistakes, and he spared no pains in trying everything likely to help in the solution of the problem he had set before him. How completely he succeeded is writ large in the surgery of to-day. To him it is due that the surgeon's knife now penetrates safely and successfully into regions such as the abdomen, the brain, and the chest, which not very many years ago were declared to be beyond its reach. To him also is due the painlessness of wounds made under aseptic precautions. In the pre-Listerian era the smarting after wounds was often extremely distressing to the patient. This has practically been abolished. When Huxley visited the Edinburgh Royal Infirmary he summed up his impressions as follows: "What amazes me, Mr. Lister, is the painlessness of your wounds. You have not only banished those awful scourges which used to affect our wards, but you have abolished the pain and suffering associated with wounds and surgery." It may be said of him, as of Edward Jenner, that the very completeness of his success tends to obscure the greatness of his achievement.

In 1869 Lister was appointed to the Chair of Clinical Surgery in the University of Edinburgh in succession to Syme. There he continued his work, devising and testing improvements in the methods of carrying out the antiseptic principle. At the same time he prosecuted researches on the germ theory of putrefaction and on lactic fermentation. Of these Edinburgh days interesting reminiscences are contained in tributes paid to his memory by Professor Francis Caird in his class of clinical surgery and by Professor Alexis Thomson. Professor Caird said he felt, like others, that he ought to see what was going on before joining the ranks of the unorthodox. In the other wards patients died "like sheep on the hillside." If they walked into Lister's ward, what a difference! In 1874 the speaker was told, "Have nothing to do with Lister; he is hopelessly unorthodox." And yet as students every one thronged to Lister's wards, every one was attracted there, and Lister said, "From the beginning I had youth on my side." At that time many distinguished surgeons had as many as 80 per cent. of deaths, in spite of all sorts of treatment. Professor Alexis Thomson, to his class of systematic surgery, said they must not imagine that Lister's fame rested solely on his work in antiseptics or that that work itself was merely haphazard. Many new surgical procedures were introduced by Lister which were not associated with his name, as his name was too great to be linked with such minor affairs.

In 1877 he accepted an invitation to fill the place left vacant at King's College by the death of Sir William Fergusson. Here he persevered in the effort to perfect his method. In 1892 he retired from active surgical work.

Although for many years he was subjected to much criticism, and was met by active opposition—mainly by those who had not seen his work and its results—he always pressed right onward in what he believed to be the true path with a quiet confidence in his discoveries which supported him through the trials that beset the pioneer. But it must be borne in mind that Lister's path in life was easy in comparison with that of most who are the first to burst into the silent sea of strange truth. Seldom indeed have a scientific innovator's merits been more signally recognized in his lifetime than those of Lister. He was elected a Fellow of the Royal Society in

1860, and was awarded the Gold Medal of the Society in 1880 and the Copley Medal in 1902—the highest distinctions which the Royal Society has to bestow. He became President of the Royal Society in 1895. In 1896 he was President of the British Association for the Advancement of Science. He was President of the Section of Surgery of the British Medical Association in 1870 and again in 1875. It was to the Association at the Dublin meeting in 1867 that he made one of the earliest public enunciations of the antiseptic principle in surgery. Among the academic honours showered on him may be mentioned the following: The University of Edinburgh conferred upon him the honorary degree of LL.D in 1878, the University of Glasgow that of LL.D. in 1879, in 1880 Oxford made him a D.C.L., and Cambridge a LL.D. In 1897 the Universities of Toronto and Montreal each conferred the LL.D. upon him. He was an Honorary M.D. of Dublin, Würzburg, Budapest, Bologna, and Geneva. In 1898 the Victoria University conferred upon him the degree of D.Sc. He was an Honorary Fellow of the Royal College of Surgeons in Ireland and of the Faculty of Physicians and Surgeons of Glasgow. When he retired from the active staff at King's College he was appointed Emeritus Professor of Clinical Surgery and Consulting Surgeon to the Hospital. Foreign academic bodies vied with each other in doing him honour. He was a Foreign Associate of the Institute of France and of the Paris Academy of Medicine (1899) and a Laureate of the French Academy of Science (1881); an Honorary Member of the American Academy of Arts and Sciences, of the German Surgical Society and of the medical societies of Amsterdam, Budapest, Dresden, Finland, Leipzig, Munich, and St. Petersburg, and of the Imperial Academy of Sciences, Vienna. He also received the Cothenius Medal of the Imperial Leopold Academy of Natural Sciences, and the honorary degree of M.D. from the Universities of Bologna, Budapest, and Würzburg.

While Regius Professor of Clinical Surgery in Edinburgh he was appointed Surgeon to the Queen in Scotland, and, after his removal to London, Surgeon-Extraordinary. In 1900 he was appointed Sergeant-Surgeon-in-Ordinary to Queen Victoria, and in 1901 was nominated to the same office to His Majesty King Edward VII. He was gazetted a Baronet in 1883, and in 1897 was made a peer with the title of Baron Lister. On the occasion of the Coronation in 1902 his name appeared in the first list of members of the Order of Merit, and he was sworn a member of the Privy Council. He was also a Knight of the Prussian Order "Pour le Mérite," and a Knight Commander of the First Class of the Order of the Danebrog (Denmark). In 1907, on the occasion of his eightieth birthday, he was presented with the Honorary Freedom of the City of London, the document being contained in an elaborate golden casket. In the same year a committee consisting of Sir Hector C. Cameron, Sir W. Watson Cheyne, Mr. R. J. Godlee, Dr. C. J. Martin, and Dr. Dawson Williams was formed to collect his scattered papers and publish them in a permanent shape. In this work they had the advantage of the guidance and advice of Lord Lister himself. The *Collected Papers*, which were printed by the Clarendon Press, appeared in two handsome volumes in 1909.

Lord Lister, who was left a widower in 1893, had no children, and his peerage—the first conferred on a member of the medical profession in this country—dies with him. Dignified in appearance, he was modest and unassuming in manner. He was a man of absolute integrity and utter devotion to duty and gave the impression of single-hearted love of truth. He treated his patients of whatever rank with the most genuine sympathy for suffering; indeed, it was the horror excited in him by the sights of the hospital wards in his early days that moved him to seek for a means of prevention. William Ernest Henley, who was a patient in the Edinburgh Royal Infirmary for eighteen months, left the following fine pen picture of him:

The Chief.

His brow spreads large and placid, and his eye
Is deep and bright, with steady looks that still.
Soft lines of tranquil thought his face fulfil—
His face at once benign and proud and shy.
If envy scout, if ignorance deny,
His faultless patience, his unyielding will,
Beautiful gentleness and splendid skill,
Innumerable gratitudes reply.
His wise, rare smile is sweet with certainties,
And seems in all his patients to compel
Such love and faith as failure cannot quell.
We hold him for another Herakles,
Battling with custom, prejudice, disease,
As once the son of Zeus with Death and Hell.

It was proposed on behalf of the Royal Society and the Royal College of Surgeons that Lord Lister should be buried in Westminster Abbey, and the consent of the Dean was obtained. It appeared, however, that Lord Lister himself had expressed a wish to be buried in Hampstead Churchyard, where the body of his wife lies. The interment is fixed for this day (Friday), and the first part of the funeral service will take place in the Abbey at 1.30 p.m. The coffin of the late Lord Lister will bear the following simple inscription: "Joseph Lister, born 5th April, 1827, died 10th February, 1912." The inscription plate will be of bronze.

The King, who, it is said, invariably remembered Lord Lister's birthday and sent a present of flowers on each anniversary, has sent a gracious message of sympathy to the late surgeon's family.

Queen Alexandra and other members of the Royal family also have telegraphed, and numerous messages of condolence have been sent by representatives of the medical and surgical professions. Queen Alexandra's message is in the following terms:

Pray accept my most sincere sympathy in the great loss which the whole nation shares at the death of Lord Lister, whose name will ever be honoured and gratefully remembered as that of the greatest benefactor to suffering humanity throughout the world.

The following telegram was sent to Sir Ray Lankester from the Directors of the Institut Pasteur, Paris:

L'Institut Pasteur vous prie d'exprimer à la famille de l'illustre Lister et à la Société Royale les regrets que lui cause la mort du rénovateur de la chirurgie.

ROUX.
METCHNIKOFF.

At the request of the Vice-Chancellor, the Principal of the University of London has written to Dr. A. H. Lister assuring Lord Lister's family of the profound sympathy of the University (of which he was a Fellow), and adding:

We are proud to remember on this occasion that he was one of the only two men, outside the circle of Royalty, upon whom this university has ever conferred an honorary degree.

The Austrian Minister of Public Instruction, Dr. de Hussarek, has addressed to the British Ambassador an expression of condolence upon Lord Lister's death.

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Sir W. WATSON CHEYNE writes:

I need not go into the tale which has been so often told of late years of Lister's great discoveries, and the way in which they have been elaborated. At the present moment my mind goes back to the time when I first came into contact with him nearly forty years ago. It was at the commencement of the winter session 1872–3 that I first attended Lister's classes, and the admiration and enthusiasm with which he then inspired me have never waned.

To my mind he was an ideal teacher and master, and I well remember the enthusiasm with which his work was followed by the large number of students who at that time attended the medical classes at the Edinburgh University. The operating theatre in the old Infirmary, although it contained seating accommodation for a large number of students, was always overcrowded on his lecture days, and, indeed, it was a race when the classes broke up in the University at 12 o'clock, to obtain a seat in the theatre at the old Infirmary; and this enthusiasm continued up to the end of his work in Edinburgh.

The cause of the enthusiasm is not far to seek; not only was he a great lecturer and teacher, but the matter of his lectures was always full of interest. It was not a case of being taught things which we could find in the books; everything was new, and the treatment of the various cases was always looked at from the fresh point of view, which resulted from the abolition of the danger of septic diseases. The treatment which he advised, which he carried out before us, and which ultimately proved completely successful, was often diametrically opposed to what we were taught by the other surgeons, and what we were told would almost of necessity lead to a fatal result. In fact the revolution in surgical practice which went on before our eyes was so complete, and the outlook for the future was so vast, that it is little wonder that Lister gathered around him a large number of enthusiastic followers. One of the great charms which attracted us was that he taught us to think. We were not told certain established facts which we had to learn by rote. It was new pathology and new treatment with which we became acquainted, and he was always searching for the reason of what he observed, and trying to devise treatment which would be in unison with the conclusions which he had drawn from his observations. His observations and deductions were laid before us and found a fruitful source of conversation and argument among the students.

One can imagine what it must have been to introduce modern surgery suddenly into the midst of old surgery, and it was very modern surgery that Lister taught. I still possess my note book containing full notes of his lectures during the winter session of 1872–73 and the summer session of 1873, and I often look at them with pleasure and find that the treatment which he then recommended to us for the first time is, in many respects, the same which is being employed at present. Lister was always interested in the work of others, and ready to help them in every way; very open-minded in adopting methods which seemed to be an improvement on his own; very tolerant of other opinions and almost painfully conscientious. During my long association with him I never heard him speak ill of any one.

Mr. G. LENTHAL CHEATLE writes:

It is frequently said of Lord Lister that he was not a great teacher and neither was he a great operator. I have never heard the former stated by anybody he had taught, nor have I heard the latter said by anybody who had watched his practice.

To have been taught by Lord Lister is a priceless asset which it is impossible to overestimate. To go to him with a difficulty was to give him a text upon which to demonstrate, and he would place one's difficulty in its proper place and proportion, and from it soar away to the limits of knowledge and speculation.

Yet Lord Lister did not attract large classes to King's College Hospital. He often said to me he drove to the hospital with his head hanging down in his carriage at the thought he was to lecture to so few men. It was their loss as well as his, for no doubt he expected large classes when he came from Scotland to London.

There are a comparatively few men who occupy high positions in the profession who came personally under Lister's tuition. To each one of these men every surgical act and thought is based upon the great pervading personal influence which alone made the art of administering to the sick a profoundly sacred duty. All Lord Lister's clinics were really important ceremonies, in which one felt proud of having taken part.

As an operator Lord Lister was said to be slow, but when rapid manipulation was essential he was quicker and more accurate than any operator I have seen. He made his assistants feel their responsibility one day when he

thought I had given him a wrong end of the wire with which he was fixing the fractured fragments in position. He said to me, "Had you done so I would never have forgiven you."

It was after this that I was assisting him to remove a breast, and in attempting to place a Spencer Wells clamp on an intercostal artery I pressed the points of the forceps into the pleura, which gave rise to a slight amount of pneumothorax, in spite of the immediate application of my finger. I expected a heavy rebuke for my carelessness. Lord Lister did not say a word; he gave rather a deep sigh, looked at me, and then cut a periosteal flap from the nearest rib, and with it effectually covered the small hole. My forceps had stopped the bleeding.

One day I was helping Lord Lister in a case of lateral lithotomy. Dr. Hensley timed it. The operation of removing two calculi occupied thirty-two seconds. The onlookers were so impressed with the dexterity he exhibited that they clapped their hands. Lord Lister instantly turned round to them and said, "Gentlemen, gentlemen, remember where you are."

Mr. T. F. HUGH SMITH, F.R.C.S., a son of Mr. Henry Smith, who was for a time a colleague of Lord Lister at King's College, writes:

The following may be of interest: A friend and fellow student of mine—not a native of Great Britain or Ireland—had almost completed his medical career, prolonged by reason of being a slow worker, when funds ran out.

As my friend had been a dresser to Mr. Lister, I ventured to call upon the latter and to put the case of my fellow student before him. Almost before I had finished speaking he gave me a cheque for fifty pounds, shook my hand, and expressed his best wishes for the success of his late dresser.

The Rev. SYDNEY THELWALL, late Vicar of Radford Semele, Leamington, writes:

May I be allowed to publish in your columns, in memory of that great and good man, Lord Lister, who has just been taken from us, a record of a golden saying of his from which medical men, and not medical men only, may learn wisdom? When I, one of the many whom his God-given skill and generosity have benefitted, was having the advantage one day of his conversation, he said in his quiet but impressive way: "When I am asked what is the first requisite for a really first rate surgeon, I always say, 'A feeling heart.'" He added: "People do not always believe me. But it is so."

Dr. THOMAS FIELDING (Bournemouth) writes:

May I call your attention on the death of Lord Lister to an error that I believe has been made on two occasions by Sir Hector Cameron in accounts of Lord Lister's work, and published in your JOURNAL:

I think you will find it stated that the remarkable experiment of tying a blood vessel of a calf (or horse) with carbolized catgut was made in 1868, which is a year too late.

I attended Professor Lister's lectures and graduated in 1867, and well remember his coming into his class room in the early part of the year and saying, "Before beginning my lecture I should like to make a statement. All of you who attend my wards are aware of the difficulties I have had with the suppuration attending the ligatures of arteries. I have given it much thought and have been experimenting with a view to remedying it, and yesterday I completed an experiment which seems to hold out hopes of solving the difficulty. You probably know that calves are bled a week before they are killed, and I obtained permission from a butcher to bleed a calf and tie the vessel with strict antiseptic precautions. I was to have the head and neck of the calf when it was killed, and an examination seems to show that the ligature of animal tissue (catgut) had to some extent become incorporated with the living tissue of the animal. If further experiments show this to be correct I believe it will have a profound effect on the future of surgery."

I think the date of this ought to be given correctly in any obituary notice of Lord Lister because it is not unlikely that records may exist of operations with ligature of arteries based on it. I, for instance, tied the arteries on this principle in an amputation performed by Dr. J. Ewens in Dorset in August, 1867.

⁂ In the introduction to Lord Lister's *Collected Papers* it is stated (p. xxxvii) that "he first on the 12th of December, 1867, tied the left carotid artery of a horse with purse silk which had been steeped in a strong watery solution of carbolic acid."

SIR WILLIAM ALLCHIN, M.D., F.R.C.P.LOND., F.R.S.E.,

CONSULTING PHYSICIAN, WESTMINSTER HOSPITAL.

THE death of Sir William Henry Allchin, M.D., Consulting Physician to Westminster Hospital and Physician Extraordinary to the King, took place on February 8th, after a long illness.

He belonged to an old Kentish family, and always maintained his affection for that county. While busily engaged in practice and public work in London, he found his best recreation in a ramble with his wife through the Kentish lanes, and in later life he had a house in Kent, where he spent much of his scanty leisure.

He was born in Paris in 1846. His father engaged in medical practice in Bayswater, and after a private general education young Allchin entered the Medical Faculty of University College in or about 1865, and took the diplomas of M.R.C.S.Eng. and L.S.A. in 1869. He served for a time as medical officer of the *Great Eastern* when that famous forerunner of the leviathans of to-day was used as a telegraph ship. He graduated M.B. in the University of London in 1871, on which occasion he was the first man of his year in medicine taking the University Scholarship. Soon after graduating he became in succession Physician to the Western Dispensary and to the St. Marylebone Dispensary. He had held also the office of Physician to the Victoria Hospital for Children, Chelsea, and at the time of his death was Consulting Physician to that institution as well as to the Westminster Hospital. In or about 1872 he was appointed Lecturer on Comparative Anatomy and Animal Physiology at University College, and retained this post for some time after he became connected with Westminster Hospital. His connexion with University College was maintained by his election to be a Life Governor. Of his long connexion with Westminster Hospital we are able to give the following account in the words of his life-long colleague, Dr. DE HAVILLAND HALL:

"Sir William Allchin's long connexion with the Westminster Hospital and Medical School dates from 1872, when he was appointed Medical Registrar. At that time the Medical Registrar had to perform the *post-mortem* examination of patients dying in the medical wards, so that Allchin very early in his career took a large part in the work of the hospital. At the same time he was appointed Demonstrator of Practical Physiology, and he threw all his energy into the task for which he was eminently fitted by his previous training and experience at University College. In May, 1873, owing to the retirement of Dr. Radcliffe, Allchin became Assistant-Physician, and in the school he was appointed the First Lecturer on Pathology and Morbid Anatomy. In 1874 he resigned the post of Medical Registrar. In this year commenced the very strenuous work which he did on behalf of the Medical School by his appointment as Sub-Dean, Mr. Cowell being the Dean. As an indication of Allchin's readiness to assist in the work of the school it may be mentioned that when steps were taken to complete the dental department, in addition to all his other duties he undertook to teach dental anatomy, physiology, and histology. In 1877, owing to a vacancy in the Senior Staff, caused by the resignation of Dr. Basham, Allchin became Physician, and commenced the many years of splendid work which he carried on in the wards of the hospital. In 1878, after having acted as Sub-Dean for four years, he succeeded to the office of Dean of the School, which post he held for five years. In this year also he was appointed Lecturer on Physiology. In 1882 he resigned this chair to become joint Lecturer on Medicine, which post he held for ten years. In 1890, at the request of his colleagues, he again took up the duties of Dean of the School, and held office for three years.

"The chronological list which has been given above will indicate to some extent what Allchin did for the school and hospital. The high estimation in which he was held by his colleagues is shown by the fact that when the school began to go down he was requested to resume the post of Dean. As Dean he was a firm disciplinarian, strictly fair and just in his dealings with the students, but always ready to do a kind action. It was, however, in the wards of the hospital that Allchin was seen to the greatest advantage. He was most careful and methodical in his examination of patients, never in a haste to make a diagnosis before he had thoroughly considered all the bearings of the case. Hence he was an admirable clinical teacher, and reflected the greatest credit on the great medical school of University College, of which he was one of the most distinguished pupils. His demonstrations in the wards were highly appreciated by the students, and he had always a large following.

"It was therefore with the greatest regret that in 1905 his colleagues and the students heard of his intention of giving up active work at the hospital before the age of compulsory retirement had arrived. This regret was shared by the sisters and nurses, to whom he had endeared himself by his many kindnesses. On retiring from the active staff he was elected Consulting Physician to and Vice-President of the hospital.

"There only remains to say that his services as a member of the House Committee of the hospital were invaluable. He had the faculty of getting to the bottom of things and expressing his meaning in clear and logical language, so that his remarks were always received with the greatest attention and exercised a weighty influence on the decisions adopted by the committee. His premature death is consequently a great loss both to the school and also to the hospital, as up to the very last he was always ready to give advice and assistance when the need arose."

Sir William Allchin became a Fellow of the Royal College of Physicians of London in 1878, he gave the Bradshaw Lecture on the nature and causes of duodenal indigestion in 1891, was Harveian orator in 1903 when he took for his subject the study of structure in relation to function, and in 1905 gave the Lumleian Lectures on some aspects of malnutrition. He was an examiner from 1881 to 1884 and again from 1886 to 1893. He took a great interest in the business of the College and from 1883 to 1886 held the office of Assistant Registrar; he was a member of the Council from 1897 to 1899 and a Censor in 1903 and 1904.

The office of Assistant Registrar at the College of Physicians was instituted in 1883 in consequence of the work of the Registrar (then Sir Henry Pitman) having been greatly increased by the rapidly increasing number of applicants for the College licence. Dr. Allchin's was the first appointment to the office in that year, and he held it for three years. At that time the examinations and the whole administrative business of the licence were carried on at the College in Pall Mall.

About this date, 1883, Dr. Wilson Fox, deeply impressed by the fact that the regulations and character of the examinations of the University of London interposed insuperable obstacles to any but a small minority of metropolitan medical students obtaining degrees in medicine, so different to the conditions prevailing in other parts of the kingdom, brought this disability before the College of Physicians. Later it was referred on his motion to a committee to report "how far it is desirable that the College should endeavour to obtain powers to confer the title of Doctor of Medicine on its Fellows, Members, and Licentiates." After some delay, and with an addition to the reference, it was so referred, and the Committee reported, April, 1884:

(1) That it is desirable that increased facilities should be afforded to English medical students for obtaining the degree of M.D. (2) That the College should immediately take steps to promote that object either by obtaining the co-operation of one or more English universities, or by independent action.

Further action was postponed until the negotiations then going on for associating the Royal College of Physicians and Royal College of Surgeons in their examinations for their respective Licence and Membership were completed, with a view to their co-operating also in taking steps with regard to the degree question. The question was not revived until 1885, when the Royal College of Surgeons proposed the appointment of seven delegates from each College to consider it. After much discussion and references to and reports by committees on both sides, a final report was received on December 16th, 1886, by both Colleges from the delegates, recommending the adoption of the following resolutions:

1. That candidates who have passed the examinations of the Examining Board in England for the L.R.C.P. and M.R.C.S. should have a degree in medicine and surgery conferred upon them, provided that they have passed such examination in arts and science as may hereafter be defined; and have pursued clinical studies in London—or in other medical school or schools if the governing body should so determine—for at least two years after having passed the Second Professional Examination.
2. That an application be made to the Crown by the Royal College of Physicians of London and the Royal College of Surgeons of England, acting conjointly, for power to confer degrees in Medicine and Surgery.

On the occasion of an intermediate report, in 1885, in which the above resolutions of the final report were foreshadowed, Dr. Allchin, who was strongly of opinion that the desired end should be attained by a reform of the University, if possible, and not by the colleges obtaining university powers in one faculty for giving a degree, which he feared might disparage them and depreciate the value of their highest qualifications, F.R.C.P. and F.R.C.S., felt obliged to resign his appointment as Assistant Registrar, of which he writes:

Holding as I did at the time an official position in the College, I did not feel at liberty to contest the opposite view which was so strongly held by my chief, Sir Henry Pitman, as well as by the President, but the following day placed my resignation in the hands of Sir Wm. Jenner, and relieved of responsibility regained the freedom to pursue such course as might seem to me desirable under the circumstances.

So it was that on the occasion of the debate (December, 1886) on the adoption of the above final resolutions of the delegates, although with a full college and overwhelming majority supporting them, he moved the following amendment:

That no scheme for conferring degrees in medicine and surgery upon candidates who have passed the Examining Board in England shall be deemed satisfactory, unless it provide for the conferring of degrees by some university body outside the College themselves, but one on which they may be represented.

This was seconded by Dr. N. Moore but rejected by 70 to 9. Dr. Allchin found a justification for his motion when later Lord Selborne's Commission disposed of the College's petition in a few not very complimentary words of disapproval. The report, however, was adopted and the delegates authorized to take the necessary steps for an application to the Privy Council for a charter conferring on the College the powers required.

It should be noted that during all this time, from 1884 onwards, a movement for reforming the University of London was spreading. Convocation had taken the matter up, and the Association for Promoting a Teaching University in London was constituted, and had been showing much energy and activity. The Senate of the University had begun to stir itself, and in 1886 appointed a strong committee to consider representations made to it. The joint action taken by University and King's Colleges in 1886–7 for a new university was no less significant. These all lead up to the appointment of the first Royal Commission on the university question in London, of which Lord Selborne was President. The intention of the Government was announced in the House of Lords on March 12th, 1888, and the Commission issued on May 2nd: "To inquire whether and what kind of new university or powers is or are required for the advancement of higher education in London." The report of the Commission was issued in April, 1889. The gist of it was: (1) That the petition of the Royal Colleges for powers to confer degrees ought not to be granted. (2) That the existing University of London should be asked to consider whether, by alterations in its charter, the more important demands of the various petitioning bodies could be met agreeably to the scheme outlined in the report. (3) That if the university failed to do this the Privy Council would be prepared to consider the proposals for founding a separate local university.

On the receipt of the report the President consulted Dr Allchin on the action to be taken, and at a meeting of the College on May 20th, 1889, on the proposal of Dr. Allchin, seconded by Sir Risdon Bennett, a committee was appointed to consider the report, together with any other communications which might be received, with power to confer with the Royal College of Surgeons. Dr. Allchin was appointed Secretary of this Committee, a position which he continued to fill, with the highest satisfaction to the College, up to the appointment of the Statutory Commission in 1898. In June, 1888, a communication was received from the University announcing the proposed remodelling of the University in the sense of the recommendations of the Commissioners, and on the basis of the amended scheme of the Senate of June, 1887. From this time (1889) throughout 1890, negotiations were continually going on between the Royal Colleges themselves and between them and the University, and by the latter with University and King's Colleges and the Metropolitan Medical Schools, in the continuous revision of a scheme of reconstitution until a form was obtained embodying the maximum of the reforms desired which could yet be accepted by all.

At last, on February 18th, 1891, a "Further Revised Scheme," known as Mr. Anstie's, from the knowledge, judgement, and indefatigable labours of this gentleman in promoting it, was cordially approved and accepted by the colleges, and more or less by all the parties. Unfortunately, all this labour was lost for the time being, for, sad to say, on May 12th the scheme was rejected by a decisive majority in a large, imperfectly informed, and excited meeting of Convocation, and the Senate had to report its failure to the Commissioners.

Immediately on this followed an entirely new set of negotiations, hurriedly conducted under the aegis of the Privy Council, with the promoters of the draft charter of the "Albert" (henceforth "Gresham") University, and the petition of University and King's Colleges, now identified with it. This led to a full-dress hearing before the Privy Council, all interested for and against it being represented by counsel (June 29th to July 1st, 1891). Judgement was deferred for twelve days, which were devoted to further conference between the parties. On July 13th judgement was given by Lord Selborne; (1) The prayer of the University and King's Colleges was granted nearly in the form of the charter; (2) the claims of the Royal Colleges were disallowed; (3) the ten medical schools obtained their request to be made constituent colleges in one faculty, and to have five direct representatives on the council. On July 21st the Royal Colleges resolved to stand aloof from the university. The negotiations had occupied two calendar months.

The New University Charter, however, met with so much opposition in the then session of Parliament (1891) that the Government withdrew it and remitted it for reconsideration to a fresh Royal Commission appointed in the spring of 1892 under the presidency of Earl Cowper. Evidence was freely invited, and a vast amount accumulated in the course of the year. It was not till the end of February, 1894, that the report of the Commission (so-called "Gresham") was issued. It came before the Joint Committee of the two Royal Colleges on March 6th, and in April was approved by both as being "in accordance with what the Colleges have hitherto affirmed, and as constituting the most comprehensive and academic scheme hitherto proposed."

The next step was to put pressure on the Government from all the interested bodies to appoint a Statutory Commission at an early date with power to frame statutes and ordinances in general conformity with the recommendations of the report. It was understood that this would be done if not likely to be seriously opposed in Parliament. Many vexatious delays in the following years, 1895–97, occurred, including a change of Ministry (July, 1895), and it was not until late in the session, July, 1897, that it was introduced into Parliament. Nothing, however, was done, and the bill for a Statutory Commission was again introduced in February, 1898, and was eventually carried under the name of the University of London Act, 1898. Unfortunately this Act with its appended schedule introduced serious departures from the scheme and intentions of the report of the Cowper Commission, and compromises to ensure the passing of it, which in the opinion of the Colleges and others were undesirable. Under this Act the statutes of the present reconstituted University of London were settled.

At the comitia on July 26th, 1900, a notice from the Vice-Chancellor to appoint two representatives on the Senate of the reconstituted University was received, and Dr. Pye Smith and Dr. Allchin were appointed. The following resolution was then moved by Dr. Norman Moore and adopted by acclamation, the mover paying a warm tribute to the indefatigable zeal and success with which Dr. Allchin had devoted himself to the university cause during the past sixteen years, and the valuable services he had rendered the College as Secretary of the University Committee for a period of more than ten years:

> That a vote of thanks and the sum of 100 guineas be given to Dr. Allchin as an acknowledgement of his services during several years, and on numerous occasions, as Secretary to the University Committee, as Representative of the College before the Royal Commissioners and the Prime Minister, and in many other ways in relation to the reconstruction of the University of London.

As regards Sir Wm. Allchin's own or special views on the university question in London, he was from the beginning of the movement for promoting a teaching university for London in favour of a reconstitution of the old university for that purpose, rather than for the creation of a second university, and he did all in his power to promote it. On the whole, he was probably fairly satisfied with the "Finally Revised Scheme of the Senate" (Anstie's) for such a reconstitution, under Lord Selborne's Commission, which was rejected by Convocation; and also with that outlined in the report of Lord Cowper's Commission, apart from the provisions of the Statutory Commission and the schedule appended to it, which went far to mar it in several respects.

As regards medicine and medical degrees, he was strongly impressed with the reality and importance of the familiar standing grievance and disability of London medical students and the obligation of providing a degree or degrees in medicine reasonably accessible to an industrious man of average ability, and, closely connected with this, to prevent the drifting of students from London to university towns. To the last Sir William Allchin regarded the association of the university with the Royal Colleges in joint examinations (under Statute 123) for degrees in medicine, to be granted in conjunction with the primary qualifications of the colleges, under such conditions as should render them generally accessible to London students, as the most important step for remedying the above grievance of the London student and the depletion of the London schools.

For some years before his death he was engaged on a report on the university, prepared, we understand, at the request of the Government. It was, we believe, recently completed, the final proofs occupying most of his available time during his last illness.

Sir William Allchin was not a voluminous writer, but everything he published, like all his speeches on the university and other allied questions, was carefully thought out and expressed in clear and well-balanced sentences. He contributed a number of papers and addresses to the *Westminster Hospital Reports*, of which he was joint editor in 1888. He contributed the articles on disorders of digestion and of the intestines to Quain's *Dictionary of Medicine*, and assisted the editor in its production. He contributed also to *Allbutt's System* the article on diseases of the peritoneum, and himself edited a *Manual of Medicine*, which was published in five volumes between 1900 and 1903, and for that work obtained the co-operation of many distinguished writers, including many junior members of the profession, for it was characteristic of him to encourage young men to put forth their best efforts.

He was a member of the Medical Consultative Board to the Admiralty, and had been an Examiner for Commissions in the Medical Departments of the Royal Navy, the Army, and the Indian Medical Service. Altogether he did in various capacities a great deal of public work, and brought to it not only a wide acquaintance with medicine and its allied sciences, but also a constant anxiety to discharge the duties he had undertaken with careful discrimination, and punctilious regard for the rights of the individual as of the State. It was probably as much in recognition of this

public work, as of his eminence as a physician, that in 1907 he received the honour of knighthood. He was also Physician Extraordinary to the King.

Sir William Allchin married in 1880 Margaret, daughter of Mr. Alexander Holland of New York, who survives him. A memorial service was held in the Westminster Hospital Chapel at 9.45 a.m. on February 15th, and the interment took place later at East Malling, Kent.

AN OLD WESTMINSTER STUDENT writes: Allchin's clinics at Westminster were always well attended. Former students of the medical school were always present, and perhaps appreciated his teaching to a greater extent than the ordinary student. This was, no doubt, largely due to the fact that he dwelt more upon the deeper aspects of the disease than upon the diagnosis and treatment which is bound to be the chief attraction to the individual who is looking at all cases from an examination point of view. However, no one who availed themselves of the golden opportunities will ever regret the hours spent with him in the wards. There were no artificial aids to memory suggested by him, and his logic and reasoning were probably of more lasting value than such methods. Allchin was always popular with the Westminster students, and, one may say, beloved by all who came into contact with him.

JOHN MARSHALL, M.B., C.M.,

HAMILTON, SCOTLAND.

THE general public and the medical profession in Hamilton and Lanarkshire have sustained a severe loss by the death of Dr. John Marshall, which occurred on February 7th in a nursing home in Glasgow.

Dr. Marshall was a son of the late Dr. John Marshall, and was born in Hamilton in 1873. He received his early education at Hamilton Academy and Glasgow Academy, and became a student at Glasgow University, where he graduated M.B., C.M. in 1896. After spending a short time as assistant with Dr. Wardle, of Bishop Auckland, he joined his father in a large and busy practice in Hamilton, which included appointments as medical officer to several of the large collieries in the district and to the parish council. These important appointments Dr. Marshall continued to fill on the death of his father in 1902. He joined the volunteer force in 1901 as Surgeon-Lieutenant to the 2nd Volunteer Battalion Scottish Rifles, was promoted Surgeon-Captain in 1904, and was transferred to the R.A.M.C.(T.) in 1908 with the rank of Captain. He took a deep interest in all forms of athletics, and always tried to find time for recreation, though often with difficulty, in a game of golf, of which he was an exponent of no mean capacity. As a member of the Glasgow Medical Golf Club, and on the links both on the east and west coasts of Scotland, his was a familiar figure.

Naturally of a quiet and gentle disposition, almost amounting to shyness at times, he was greatly beloved by all his patients and friends. Thrown at a comparatively early age into all the cares and turmoil of a busy general practice, he was essentially a young man who realized "the importance of being earnest," and in everything he undertook, whether in work or play, always gave the impression that whatsoever his hand found to do he did it with all his might. Earnest seriousness in all he attempted, coupled with a loving devotion to the members of his family circle, may be said to be the outstanding features in a career closed with tragic abruptness.

Dr. Marshall was unmarried, and is survived by his mother and four sisters, for whom the deepest sympathy is felt in the irreparable loss they have sustained.

MR. ALLEN LANKESTER HAYNES, M.R.C.S., L.S.A., J.P., died at Witham, Essex, on February 8th. He was born in August, 1836, the son of Mr. J. B. Haynes, F.R.C.S., of Evesham, and received his education at Evesham Grammar School, Derby, and Guy's Hospital. He took the diploma of M.R.C.S., L.S.A., in 1860, and afterwards commenced practice at Evesham, first in partnership with his father then with one of his four medical brothers, and finally with Dr. L. F. Leslie. He was Medical Officer and Public Vaccinator for the second district of the Evesham Union, Surgeon to the Cottage Hospital, the Post Office, and to various friendly societies. Mr. Haynes was an ardent churchman and a Conservative in politics. He was a Justice of the Peace and for several years was an Alderman of the borough. He formerly held the rank of Surgeon-Captain in the Volunteer Force. He had a wide circle of friends by whom he was highly esteemed. During the last few years he had suffered from ill-health and had latterly resided at Witham. He leaves a widow and eight children.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

Demonstratorship in Medicine.

E. LLOYD JONES, M.D., has been appointed Demonstrator in Medicine.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on January 24th.

Recognition of Teachers.

Mr. Hugh Lett and Mr. James Sherren have been recognized as teachers of clinical surgery at the London Hospital Medical College.

Charles Graham Medical Research Fund.

Regulations were adopted for the administration of the medical research fund for which provision was made in the will of the late Dr. Charles Graham. The income of the fund, which will amount to about £1,250 a year, will be devoted to aiding research in the School of Advanced Medical Studies connected with University College Hospital. A Director of Research will be appointed at a salary not exceeding £400 a year; there will be a scholarship in pathology of the value of £200 a year, tenable for two years; and provision is further made for the award of a gold medal for pathological research, for making grants to workers in the laboratories, and for defraying the expenditure on apparatus, etc., required for the purposes of the trust.

Resignation of Sir William Ramsay.

The Senate accepted with sincere regret Sir William Ramsay's resignation of the Chair of General Chemistry at University College, and expressed their high appreciation of the services which he had rendered to the university both by his inspiring work as a teacher and by the great series of researches carried out by him at University College.

King's College for Women.

Provisional recognition was granted to a scheme for the endowment of the teaching of home science and economics in connexion with King's College for Women, for which purpose a sum of £50,000 has been promised, the administration of the scheme to be vested in a special committee under a trust deed. (BRITISH MEDICAL JOURNAL, February 10th, p. 326.)

M.S. Degree in Dentistry.

It was resolved:

That the appropriate Registrar be authorized to issue to any person on whom the Degree of Master of Surgery, Branch II (Dental Surgery), has been conferred a certificate stating that such person is qualified to practise dentistry or dental surgery, in accordance with the requirements of Section 18 of the Dentists Act, 1878, provided that such certificate shall not be issued except at the request of the person in question; and that the General Medical Council be informed of this resolution.

Personnel of the Senate.

Professor W. C. Unwin, LL.D., B.Sc., Pres. Inst. C.E., F.R.S., has been appointed to be a member of the Senate for the remainder of the period 1911–15, vice Sir John Wolfe Wolfe-Barry, K.C.B., F.R.S., resigned.

Personnel of the External Council.

Dr. H. L. Eason has been appointed a member of the Council for external students for the remainder of the period 1911–12, vice Dr. Leonard Hill, F.R.S., resigned.

Physiological Laboratory Committee.

Sir David Ferrier, F.R.S., has been elected a chairman of the Physiological Laboratory Committee for the remainder of the year 1911–12.

Appointment of Representative.

Dr. Frederick Taylor has been reappointed the representative of the University on the General Medical Council.

UNIVERSITY OF BIRMINGHAM.

THE annual report of the Council of the University shows that during last session there were 1,017 registered students, of which number 633 were matriculated students. This is a total increase of 59 on the previous year. The total number of students was distributed as follows:

	1910–11.	1909–10.	1908–9.	1906–7.	1904–5.
Faculty of Science ...	239	263	245	207	134
Faculty of Arts	281	246	215	170	124
Faculty of Commerce ...	28	28	30	18	16
Faculty of Medicine ...	85	71	75	66	92
Total matriculated ...	633	608	565	461	366
Unmatriculated ...	384	350	419	483	479
Total	1,017	958	984	944	845

In the Faculty of Medicine in 1910–11 there were 155 male students and 45 female students. There has been during the past year a closer incorporation of clinical teaching in medicine with the university, and thereby the medical staffs of the General and the Queen's Hospitals have become clinical teachers to the university. By this means the additional Government grant for medical education has been secured.

The income for the year ending September 30th, 1911, was £55,423, and the expenditure £60,265. This shows an excess of expenditure over income of £4,842, which, added to previous adverse balances, makes an accumulated deficiency of £37,748.

Grant from the Birmingham City Council.

At a meeting of the Birmingham City Council held on February 6th it was decided to make an annual grant to the university of £15,000 as from April 1st, 1912. The conditions of the grant are as follows: (1) That the university should offer fifteen major scholarships annually, entitling the holders to the remission of the university fees altogether, with a maintenance grant of not more than £30 per annum. This, if carried out and suitable candidates were forthcoming, will involve an annual expenditure which might amount to upwards of £3,000. (2) "That the university should (*a*) maintain such tutorial classes as may be considered desirable by the joint committee of the university and working men representatives, and (*b*) appoint junior lecturers in such subjects as economics, history, and literature (or such others for which there is a demand in working-class circles), who would be appointed with the definite object of devoting part of their time to giving evening lectures to adult workers at the university itself or in other parts of Birmingham."

UNIVERSITY OF GLASGOW.

UNIVERSITY COURT.

Inclusive Fees.—At the meeting of Glasgow University Court on February 8th the question of inclusive fees was under consideration. A memorandum of the resolutions adopted at the conference of representatives of the four University Courts, held at Perth in December last, was submitted. Dr. Hutchison objected to any increase on the students' fees in view of the grant of £12,500 per annum recently made by Parliament to the university. The ordinance passed by the University Court and sanctioned by Parliament three years ago had been in no way altered or suppressed. No doubt the Court had power to raise or lower class fees, but neither under the Act of Parliament nor in the ordinance was there anything about inclusive fees. Sir David McVail objected to the inclusive fee system as an interference with the liberty of the Scottish student. Ultimately it was agreed to send a draft reply to the communication from the General Council to the effect that the University Court would come in with the other universities in establishing a system of inclusive fees, but that the following be incorporated in the reply: "That any student not being a beneficiary of the Carnegie Trust who, on presenting himself for graduation, can show that the classes which he has actually taken would, if paid for severally on the scale of fees in force at the time, have amounted to a less sum than he has paid in inclusive fees shall be entitled to have the balance repaid to him by the university."

Medico-Legal.

WORKMEN'S COMPENSATION.

A Medical Referee's Opinion.

IN Watkiss *v.* Shelton Iron, Steel, and Coal Company (Hanley, December 20th, 1911), the applicant was a labourer. Whilst employed in a dip in the Hanley Deep Pit, the back of his hand was scratched by rusty iron, and after a time blood poisoning ensued. The wound healed, and the applicant resumed work, but subsequently was unable to continue owing to muscular pains in the upper part of the arm. The medical witnesses called by the applicant disagreed in their evidence with those called for the defence, and the judge under the circumstances decided to submit the medical points of the case to a medical referee, selecting Mr. J. T. J. Morrison, F.R.C.S., of Birmingham. That gentleman, in the first instance, reported that he had come to the conclusion that blood poisoning had not caused any disease of the muscles, and that, if the applicant could free himself from the idea that he could not use his arm, he would regain the natural use of the limb. Both sides having claimed that this report was favourable, the county court judge remitted it to the medical referee. On his having further reported,

His Honour remarked that, as it was a peculiar case, he had thought it right to call in the services of a medical referee. His report, however, was not conclusive, both sides claiming that it was in their favour. Dr. Morrison had since given him a second one to be added to his original report. In this communication Dr. Morrison submitted that the data which seemed to be material were: (1) The infected wound of the wrist; (2) the recovery to a certain extent; and (3) incapacity for full work, due, in his opinion, setting aside the weakness, to the idea conceived in the workman's mind. Obviously, proceeded Dr. Morrison, the accident and incapacity were somehow connected, and, he took it, the essential point was to distinguish, if possible, between the modified sequence and the direct result. In doing this he gave his opinion in the form of answers to two questions: "(*a*) Was the accident (including the wound infection) the direct cause of the infection? To this the answer was in the negative. (*b*) Had the mental state which controlled the incapacity been induced by shock or lead poisoning or any other morbid state, mental or physical, directly traced to the constitution? The answer to that question was also in the negative." In conclusion Dr. Morrison wrote: "On the basis of these views, I have to express an opinion that the idea in the workman's mind is self-conceived. The accident being eliminated, I assume it is not necessary to decide whether the conception was induced by independent brooding or by any other cause that may be suggested." On this statement His Honour gave judgement for the respondents.

Pneumonia or Accident?

In Doyle *v.* Workington Iron and Steel Company (Whitehaven, December 20th, 1911) some interesting evidence was given as to whether a blow on the breast can give rise to pneumonia. It was admitted that the claimant's husband died of that disease.

The accident occurred in the pit; the deceased was knocked down by a bogie, and on the next day a doctor was sent for, and found him suffering from acute pneumonia of the right side. The patient died and the medical man expressed the opinion that death was due to traumatic or contusion pneumonia, brought about by the accident—that, in falling, he fell on his breast and so caused a contusion of his lungs. A previous attack of pneumonia would undoubtedly make him predisposed to another attack. When giving evidence, he said, in reply to His Honour, that he did not see any mark of bruises on the chest. The pneumonia was in the middle lobe of the right lung. In cross-examination, he said that pneumonia was sometimes epidemic. At that time there was an epidemic of pneumonia at St. Bees. The patient had died of contusion pneumonia or concussion pneumonia.

Another medical witness said he had heard all the evidence, and was of opinion that the man's death was due to the accident. A previous attack of pneumonia would without any doubt whatever make him more disposed to another attack. In the majority of cases there was no external evidence of bruising. He had had two cases of severe blows on the abdomen with internal rupture without any external appearance of contusion. He would not use the term "septic pneumonia" of the present case, because that might be understood to mean epidemic pneumonia.

A medical witness called on behalf of the employers said he had heard the evidence given and thought death was not connected with the accident. There was an epidemic of pneumonia in the district at the time. He attended five cases at St. Bees, and he heard that there was at the same time an epidemic at Frizington.

His Honour and Dr. Tawse, medical assessor, retired to consider the case. On their return His Honour said that no doubt there was some difficulty in the case. The difficulty arose in this way: It was necessary that the applicant should prove conclusively to the satisfaction of the court that the man died from pneumonia resulting from the accident. They had come to the conclusion that this had not been proved, and when he had said that he had said really all that it was necessary for him to say. They were bound by the law as laid down in the superior courts to the effect that where the evidence was equally consistent that death had been caused in a certain way, and that it had not been caused in that way, that was not conclusive proof. They therefore found that it had not been proved that death had been caused by the accident—in other words, that the injury did not result in the death; that had not been proved. He therefore gave judgement for the respondents with costs.

Hydrocele.

In Brown *v.* Cargo Fleet Iron Co., Ltd. (Middlesbrough, January 23rd), it appeared that the applicant was an ore filler, a healthy man, and a very good workman, very rarely losing a shift. The man had to pull a barrow weighing about 6 or 7 cwt., and the load of ore about 18 cwt.—24 or 25 cwt. in all—from the tip to the trucks. On July 29th, as he was struggling to wheel his barrow up the incline with a full load, he felt a severe pain the lower part of the abdomen. His mate, who was near by, heard him cry out that he had hurt himself, and he was unable to continue. He went and sat down in a cabin, thinking it would pass it off; but as it grew worse, he reported the accident to the firm, and went home. The same day he went to see Dr. Benson, who found a swelling in the lower part of the abdomen, and sent him to the hospital. Later on he

was admitted to the hospital, where he underwent an operation for hydrocele, which had developed. The question was whether the hydrocele was caused by disease or by the accident.

Dr. Benson, who saw the man on the day of the accident, said hydrocele might be caused by disease or injury; but from the history of the case he thought in this case it was caused by the strain, though he admitted that it was unusual. Two other medical witnesses gave similar evidence.

Dr. Jones, house-surgeon to the North Ormesby Hospital, into which institution the man was admitted to undergo an operation, said it was his opinion that the hydrocele was of long standing. He questioned the man several times, and on one occasion he said: "Well, there might have been a bit of a swelling there before." Dr. Levick concurred, and said he saw the man a few days after the accident, and did not think the hydrocele had been aggravated by the accident.

At this stage His Honour stopped the proceedings and found for the respondents, with costs.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

City of Cork.—The population of the City of Cork at the census of 1901 was 76,122, and it is on this number that the superintending medical officer of health, Dr. Denis D. Donovan, appears to have based the statistics in his annual report for 1910. The birth-rate thus calculated was 25.8 per 1,000, the death-rate from all causes 19.3 per 1,000, and from the principal zymotic diseases 0.9 per 1,000. For many years the zymotic death-rate has not been high, a fact which may be associated with the free use that is made of the isolation hospitals. All the eight cases of typhus fever which occurred in 1910 were treated in hospital, 50 per cent. of the scarlet fever cases and 80 per cent. of the diphtheria and typhoid fever cases were thus isolated. The most serious problem to be dealt with in Cork is the enormous amount of tuberculosis. The phthisis death-rate in 1910 was 3.0 per 1,000, or only slightly below that recorded in 1903, when it was 3.7 per 1,000. During three years a system of voluntary notification has been in force, but barely 1 per cent. of the cases have been notified. Dr. Donovan strongly urges the adoption of compulsory notification of the disease, a course which he considers would enable the sanitary authority to carry out the simple precautionary measures needed to prevent the spread of infection. By means of leaflets and in other ways the inhabitants of Cork are being instructed as to the nature of the disease, but it is not very encouraging to learn that, although 233 deaths occurred from consumption in 1910, in only 83 instances were the services of the public health staff requisitioned to carry out disinfecting operations.

County Borough of Halifax.—At the last census it was found that the population of the four county boroughs—Halifax, Hastings, Burton-on-Trent, and Canterbury—had decreased since 1901. The recorded population of Halifax was 101,556, or 6,644 less than the estimated population at the middle of 1910. Calculated on the revised estimate of population the birth-rate in 1910 was 18.2 per 1,000 and the death-rate from all causes 15.1 per 1,000. The rate of infantile mortality was 89 per 1,000 births, a very remarkable decrease upon the rate recorded for 1900—namely, 135 per 1,000. The Notification of Births Act came into force in Halifax in March, 1908. The lady health visitor appointed by the corporation is assisted in her work of visiting the homes of newly born children by members of the Halifax Public Health Association. For the purpose of organization the borough is divided into five districts, a certain number of voluntary visitors being assigned to each district under the charge of a superintendent. A nourishment scheme was started at the end of the year to provide nourishment for expectant mothers and for those recently confined. Any mother in need can have a meal ticket, which provides her with a dinner for twelve days, to be renewed, if necessary, at the expiration of that time. She must consume the meal at the dining-room arranged for, which is always the nearest to her home. Dr. Neech, the medical officer of health, does not mention the Goux conservancy system in his report, but in the report of the inspector of nuisances, which is attached to Dr. Neech's report, it is stated that at the end of 1910 there were over 18,000 of these closet tubs in use in the town.

Stratton Rural District (Cornwall).—The population at the last census was 4,924, or a decrease of 84 since 1901. The birth-rate was 20.0 per 1,000 and the death-rate from all causes 10.1 per 1,000. The infantile mortality-rate was equal to 88 per 1,000 births. Dr. D. A. Chamberlain, the medical officer of health, reports that there is considerable room for improvement in the housing conditions to be found in some of the smaller villages in the district. The lack of suitable cottages renders occupation of those which are uninhabitable a necessity. It is satisfactory to find that at last there seems to be a probability of an isolation hospital being erected for the joint use of the inhabitants of the Stratton and Bude urban and the Stratton rural districts, in which there is a combined population of nearly 8,000 persons.

Stockton Rural District.—This Durham district has not increased so rapidly during the past decade as it did in the ten-year period 1891-1901. The population at the last census was 17,527. The birth-rate was 28.5 per 1,000, the death-rate from all causes 11.9 per 1,000, and the infantile mortality-rate was equal to 87 per 1,000 births. The Medical Officer of Health, Dr. J. W. Blandford, fears there is likely to be some overlapping in the duties of the school medical officer and the medical officer of health which may lead to confusion and friction. Both scarlet fever and diphtheria were prevalent in the district during the year, 58 cases of the former disease and 51 of the latter having been notified. Seven cases, 3 terminating fatally, of pneumonia occurred in two houses in the same locality. Examination of the sputum and of material taken from the throats of the patients revealed the presence of diphtheria bacilli, but no pneumococci were found.

LOCAL GOVERNMENT BOARD INQUIRIES.

F. (South Wales).—A medical officer of health who gives evidence at an inquiry of the Local Government Board must give expression to the opinions which he considers will be to the best interests of public health of the district irrespective of whether he is in agreement with the sanitary authority on particular matters. He is by no means expected to support the wishes of the authority when such support is contrary to his own judgement. It would be prudent for him to let the sanitary authority know, prior to the inquiry, what the nature of his evidence is likely to be.

Medical News.

THE Chelsea Hospital for Women has received a donation of £200 from Mr. R. Nivison.

THE Royal Victoria Hospital, Bournemouth, has received the sum of £500 under the will of the late Miss Maria Margaret Panton, of Bournemouth.

AT the meeting of the Medico-Legal Society, to be held at 11, Chandos Street, W., on Tuesday, February 20th, at 8.30 p.m., Mr. George Jones, barrister, will read a paper on defects in the organization of the medical profession.

MR. C. F. G. MASTERMAN, M.P., Chairman of the Joint Insurance Committee, has been appointed Financial Secretary to the Treasury in the place of the Right Hon. T. McKinnon Wood, appointed Secretary for Scotland.

IN connexion with the opening of Parliament the St. John Ambulance Brigade posted sixteen stations along the route traversed by the King and Queen; 206 members of all ranks paraded, and in all twenty-six cases were treated.

THE Public Health Committee of the Lambeth Borough Council propose to invite a conference with reference to the establishment in the district of tuberculosis dispensaries in connexion with the campaign against consumption.

THE Association for the International Interchange of Students has arranged a conference, which it is stated will be attended by representatives from universities throughout the English-speaking world, to meet in London on June 28th, that is, in the week preceding the meeting of the Congress of Universities of the Empire.

A CERTAIN number of appointments to the West African Medical Staff will be made about the end of March. The salary is £400, rising by annual increments of £20 to £500 and afterwards to £600, with prospects of promotion to higher posts with salaries ranging up to £1,200 and allowances. The age limits are 23 and 35. Officers are entitled to four months' full-pay leave in England after each year's service, and to free passages. Pensions are awarded after 18 years' service, or after seven years in cases of invaliding. Particulars may be obtained from the Private Secretary, Colonial Office, Downing Street, S.W.

THE Basingstoke Borough Council applied recently for a ten mile speed-limit upon certain streets in the town. As a result of a conference between the Borough Council, the Hants County Council, the Royal Automobile Club, and the Automobile Association and Motor Union, and after the inspection of the road, the opposition to the proposed limit was withdrawn. The local authority agreed to supplement the ordinary speed-limit signs with special illuminated signs for use at night. This, we are informed, is the first instance of the erection of such illuminated signs by a local authority, and, should the experiment prove satisfactory, the motoring organizations will endeavour to get the number extended to indicate both existing and future speed-limits.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

MR. FRANK KENNEDY CAHILL, F.R.C.S. (Dublin), would like to find out whether there is a book in French corresponding to Deutsch's medical German, containing a list of medical terms in French, followed by conversations in the form of question and answer for each region of the body.

*** We know of none. Perhaps some of our readers may be able to supply the information required.

H. W. asks for information in the case of a young man, with no history of bladder, kidney, or urethral disease, who suffers when at home from frequency of micturition, the bladder requiring to be emptied about every two hours. There is also marked urgency. On the other hand, he never requires to rise at night, and when on a visit from home, or when his daily routine of work is interfered with, so that his mind is off his bladder, he can carry his urine for a normal time. There is nothing abnormal in the amount or constituents of the urine. The condition is of about two years' standing.

MR. BOWLES, SURGEON, OF HIGH WYCOMBE.

S. D. C. writes: Dr. Martin Llewellyn of High Wycombe is said to have accompanied Charles I to the scaffold and to have received from the King the gloves he wore upon that occasion. The doctor is said to have transmitted these gloves to a great granddaughter, who married a Mr. Bowles, surgeon, of High Wycombe. Is anything known of this Mr. Bowles or of the present whereabouts of the gloves? The gloves recently obtained by a law suit have no documentary history, so I was informed by the gentleman who received them and who courteously gave me all the information he could about them.

INCOME TAX.

TAXED has professional earnings of £40, and untaxed income from interest amounting to £8. The proportion of his rent regardable as paid for professional purposes is £60. On inquiring whether he is bound to pay income tax on the £8, he is referred to various sections of the Income Tax Acts.

*** Our correspondent has two means of obtaining relief. He may, if his total income from all sources be under £160 or under £700, claim total exemption or an abatement, as the case may be; or, if his income exceed £700, he may prove that he has made a loss on his profession after charging all expenses, and may claim to be relieved of tax on other income to the extent of that loss, under the Customs and Inland Revenue Act, 1890. He should communicate with the Surveyor of Taxes accordingly.

F. D. H. R. receives a salary of £150 and extra fees as district medical officer, and wishes to know whether he may return his salary for assessment under Schedule E and the extra fees under Schedule D, together with his income from private practice.

*** The Revenue authorities will raise no objection to the inclusion in the general return under Schedule D of both the salary and the fees on the average of the three preceding years; they might, perhaps, demur to treating the salary under Schedule E and the fees under Schedule D, though there is much to be said for that course.

LETTERS, NOTES, ETC.

DR. A. A. WARDEN (Paris) writes: It is impossible to read without the greatest interest all that Mr. Leonard Hill writes on his experiences with oxygen as a therapeutic agent. One gathers that the usual method by which Mr. Hill has administered oxygen is by inhalation, the defects and uncertainty of which have led him to construct the ingenious apparatus figured on p. 71 of the BRITISH MEDICAL JOURNAL, January 13th. Mr. Hill states that "undue alarm as to the poisonous effect of oxygen has been felt by the medical profession," but our neglect has surely rather been due to our ignorance of its physiological action and therapeutic value, and to the fact that hitherto no apparatus save the clumsiest has been at our disposal for applying it. Mr. Hill points out that "in the struggle with the invading micro-organism (in pneumonia) oxygen helps to maintain the strength of the heart and so preserve the patient until the process of immunization is established and the disease arrested," the object evidently being to get the oxygen absorbed as quickly as possible. Surely then the subcutaneous injection of oxygen has many advantages over its inhalation, not only in diseases of the respiratory tract, but also in many other conditions—septic infections, tuberculosis, anaemia, etc. For many years Professor Thiriar, of Brussels, and others have thus used oxygen. In 1906 Dr. Albert Rouet published a case of ascitic tuberculous peritonitis successfully treated by the intraperitoneal injection of oxygen. In December, 1910, I injected several litres of oxygen in a patient with bad double pneumonia. The great difficulty hitherto has been that of accurately measuring and controlling the amount of oxygen injected, the only apparatus available being the large metallic reservoirs used in commerce, or the oxygen bag. (I used Professor Thiriar's instrument filled from a large cylinder under pressure.) This difficulty has now been overcome by the admirable apparatus designed by my friend, Dr. Raoul, Bayeux, and presented by him at the Academy of Sciences on November 20th, 1911. It consists of three parts: (1) A light but strong and accurate "détendeur" or decompressor. (2) A series of small cylinders containing the oxygen under a pressure of 100 atmospheres, so that a litre of the gas is about the volume of a cigar. (3) A sensitive tap that allows the oxygen to be distributed at rates varying from 1 c.cm. to 1 litre per minute. I believe that in oxygen thus used we have a non-toxic and potent remedy likely to prove of use in many pathological conditions.

A STUDY OF "PSYCHICAL RESEARCH."

IN the review of Dr. Tuckett's book, *The Evidence for the Supernatural*, which appeared in the JOURNAL of February 10th, at line four from the bottom of the first column of p. 309, the title of the work by Mr. Whetham, F.R.S., referred to as "Recent Development of Psychical Research" is the *Recent Development of Physical Science.*

SHADOW TEST IN RETINOSCOPY.

DR. GEORGE HARDYMAN (Bath) writes: In calculating the spherical and cylindrical dioptric measurement by the shadow test in retinoscopy, I have found the following algebraic formula useful:

$$\frac{x-1}{+(y-x)\phi}$$

x being the dioptric measure of the lens abolishing the shadow in the horizontal meridian, and y the dioptric measure of the lens abolishing the shadow in the vertical meridian. The calculation is made as if the axis was vertical, and afterwards corrected if it be not so. The above formula, I believe, holds good for all forms of regular astigmatism as well as for emmetropia, hypermetropia, and myopia.

ERRATA.

THE following corrections should be made in Dr. Crofton's address on the prevention and treatment of pulmonary tuberculosis, published in the JOURNAL for February 10th:

Page 295, col. 1, lines 36–38, for "13 (8 per cent.), in the case of males and of 15 (6 per cent.) in the case of females," read "13 to 8 per cent. in the case of males, and of 15 to 6 per cent. in the case of females."

Page 296, col. 1, line 50, for "neurones," read "hormones."

Page 298, col. 2, line 26, for "cases," read "causes."

Page 298, col. 2, lines 35–36, for "acts as an excellent stimulant and for the formation of antitoxin," read "acts as an excellent stimulant for the formation of antitoxin."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.